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PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*Cases of Maculated Typhus or Ship Fever, with Suggestions of Treatment; being the Result of a Series of Observations, made during the Prevalence of this Disease at South Boston and Deer Island Hospitals, in* 1847–48. [With Plates.] By J. B. UPHAM, M. D., of Boston.

[Continued from Vol. VIII., N. S., p. 328.]

THE cases presented in the last number of the Journal are offered as fair examples of the fever witnessed in the epidemic under consideration. They are a few from a multitude of records made at the bedside, and are given with minuteness and particularity, to afford a faithful *portraiture* of the disease, as manifest under its ordinary phases, in its acute or primary forms. It is not our object to discuss here the nature of the phenomena thus depicted, and we pass on to some considerations of treatment.

The conditions attendant upon the advent of the fever were unfavorable to its management, at first. Coming, as it did, suddenly upon our shores, in the form of an epidemic hitherto

almost unknown to us, it took the whole medical community by surprise, and for some time they were unsettled in opinion as to the nature of the malady, and the best modes of treatment. Especially were these embarrassments felt at the House of Industry, which was never intended as a receptacle for infectious diseases, and where the fever, in large amount, was thrust into wards already filled to their capacity with miscellaneous patients.* Moreover, the medical force allowed at the Alms House department, at all times sufficiently limited, was wholly inadequate to the additional burdens imposed, while the constant demand at the bedside for the exertions of those still remaining fit for duty, left little time for study and investigation elsewhere.

Patients were brought into the hospital directly from the ships, in every stage of the disease, and in all its forms and complications; but very few were seen, at first, on whom the fever had not become firmly fixed, and their obtuseness and indifference was such, as to preclude all hopes of any rational account of themselves previously. All that could be done was to treat symptoms as they presented, and rely on observation and experience to furnish better means and resources for the future. As might be supposed, the ratio of mortality was at first fearful. But as time permitted the better understanding of the disease—as the influx of patients became more gradual and uniform, and better accommodations for the sick were provided, a plan of treatment was matured and followed with something like satisfactory success.

It was early apparent that here, as in most epidemics occurring among a class of people reduced by want and privations of every kind, pure air, cleanliness, and good nursing, were measures of primary importance. Bland nourishing food and drinks, given frequently in small quantities, were, in most cases, demanded throughout the whole course of the disease. Conjoined with such hygienic measures, the use of mild evacuants — of diaphoretics, nervous and arterial sedatives or stimulants, as the case might require, together with the usual

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* The hospital accommodations at Deer Island were not provided till several months afterwards.

means to mitigate the symptoms of fever—was all that constituted the general system of treatment. The details were varied according to the indications determined by the circumstances of the patient, the types and forms assumed by the disease, and the complications which arose during its progress; so that while the general management of the case might safely be intrusted to the intelligent and faithful nurse, the intervention of the physician was demanded to obviate injury to the vital functions, and guard in turn each important organ on which the fever threatened to fall with its leaden weight.

It was soon manifest that the disease was eminently contagious among those much in communication with the sick. Measures were consequently adopted, with a view to prevent the spread of the disease. The fever patients were separated from the other inmates of the hospital, and placed in shanties erected for their accommodation, at a distance from main building. The ventilation of these temporary structures was easily obtained, and it was found that patients in them fared much better than those in the hospital proper.

Before admission to the wards, each patient, who was in a condition to bear it, was subjected to the process of thorough cleansing by the warm bath, an operation the more salutary to the subject, as the majority of them, according to their own assertions, (which we are inclined to believe,) had never experienced this privilege before. As soon as the fatigue passed off, a grateful sense of relief and mitigation of all the symptoms followed. Add to this the unknown luxury of clean sheets and careful attendance, and the result was a positive improvement in the patient, whatever might be the stage of the disease.

As the epidemic advanced, and the fever began to spread by communication, opportunity was offered to study its course from its first inception, and to adapt our remedial measures to the various stages of its progress. The period of incubation in the subjects of direct contagion, could not be definitely determined. So far as our observation goes, it seemed to observe no fixed law in this respect, but to depend on the virulence or concentration of the poisonous element, whatever it may be, as also upon the power of resistance on the part of the person exposed. From certain premonitions, if carefully attended to,

the recipient of the contagious influence could oftentimes himself determine when his system had become duly charged, and by prompt precautionary measures, still resist its specific impression. These indications are giddiness and a sense of faintness, and peculiar nausea and malaise, occurring suddenly after exposure to cases of peculiar malignity or offensiveness, or long continued subjection to the effluvia and exhalations concentrated in ill ventilated apartments. In such case, immediate resort should be had to a change of clothing, warm bath, pure air, and removal for a time from all associations connected with the disease.* No doubt there are certain conditions, mental and physical, that strongly predispose to the reception of the contagion, and its subsequent development. Irregularity of any of the functions, and fatigue of body and mind, thus act. So after the actual invasion of the disease, nothing is more unfavorable to the result than this previous intellectual and physical exhaustion, especially if there is added the depressing influence of fear. Perhaps to the presence of these conditions we must look for the cause of the greatly increased ratio of mortality among the physicians and medical attendants who become the subjects of the fever. Statistics will show that no epidemic or contagious malady has ever visited our shores, or sprung up amongst us, which has proved so fatal to the ranks of our profession, according to the number exposed. Certain it is that, in this latter class, conjoined to the ordinary loss of nervous vigor, there exists a greater amount of mental anxiety and despondency, resulting from the appreciation of their own case, from which, happily

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* The writer can illustrate this in one or two instances in his own case. Once was when called to plug the posterior nares in a patient who was brought into the last stages of the disease, and presented a combination of its most malignant phases. The operation here became necessary to save life; it was accomplished with much difficulty and delay, the inhalation of the foul breath of the patient meanwhile being unavoidable. Here the impression was strong upon the nervous system, and the sensations above described marked and unmistakable; a nurse who was assisting was affected in the same manner, and obliged to desist. This patient died on the following day. An immediate attention, on our part, to the precautions above named, dissipated the symptoms at once.

for themselves, the usual subjects of this disease are in great measure exempt. As before suggested, due attention to ventilation and cleanliness in the wards, the avoidance of crowded rooms for patients, and the instant removal of all forms of filth from about their beds, together with a judicious use of disinfecting agents, did much to lessen the chance of communication.

When the morbid impression has been fairly made upon the system, and the formative stage, as pictured in the preceding cases, had commenced, attempts were made to arrest or cut short its progress. To this end, a powerful emetic was directed, aided by the warm bath, and followed by vigorous friction and sinapisms to various parts. A purgative of oil in aromatic emulsion was added, sufficient to clear the digestive canal. Most reliance was placed on the emetic, which usually consisted of ipecac in doses of ʒ ss.; doubtless mustard would prove a good substitute, producing the requisite shock more speedily and perfectly, with less exhaustion to the general system. Should signs of gastric disturbance exist at the outset, the emetic must be omitted, and external derivative and revulsive measures, stimulating pediluvia, a sinapism to the epigastrium and frictions, only employed. How we are thus able to break the associated chain of morbific causes, we are at a loss to say. It is certain that well-marked instances of the invasion of the disease were thus arrested *in limine*. But if the case was not seen till the second or third day, or after reaction had supervened, it must run its course. Usually, in favorable cases, an indistinct crisis was observed at some period between the fourteenth and twenty-first day from its first manifestation. In the majority of fatal cases in the *primary* form, death occurred between the eleventh and seventeenth day.

At first, two distinct types of the fever were noticed, viz., the *exalted* or *dynamic*, characterized by intense excitement of the vascular and nervous systems, and the *depressed* or *adynamic* form, in which, from the outset, there was general depression of the vital functions. This latter form was much more frequent, and fixed the predominant character of the epidemic. Indeed it was rare that the former condition continued throughout the whole course of the disease, general or partial

adynamia being liable at any time to supervene, giving rise to a class of *mixed* cases, which will be alluded to hereafter. Bearing in mind, then, the essential adynamic character of the affection, the general indication was to sustain the vital forces and guard the patient from death by asthenia.

Next, to protect the important vital organs.

Third. Modify existing symptoms, and minister to the relief of the sufferer.

Attention to the diet was an important consideration. The bland articles of nutriment—as arrow-root, sago, ground rice, panado, carefully prepared—were allowed during most of the acute stage, to which was occasionally added the lighter animal jellies, and, when prostration was marked, beef tea, and chicken and mutton broths, but always directed to be given in small quantities, at frequent intervals, and their effect watched. Demulcent beverages constituted the principal drink of the patient. The appetite was mostly feeble. The case of Swain, noticed in the preceding examples, was a curious instance to the contrary. Perhaps, in the whole management of the fever, there was no more delicate and important point of consideration than how to provide for the sufficient and proper alimentation of the patient, without risking too much the irritation of the digestive mucous membrane.

When the patient was seen early in the disease, if he had not been previously violently purged (which was too often the case), a gentle cathartic of oil in emulsion, in amount sufficient to clear the digestive canal, was administered. This was found always to act kindly, and with sufficient effect to unload the bowels, while the risk of subsequent mischief was much less than from calomel or the more powerful purgatives in too common use. The same thing was repeated, or emollient enemata substituted, as occasion required, throughout the course of the fever. Venesection was rarely employed. Even when the reaction was excessive, and vascular excitement intense, it was deemed best to deplete by other means than by loss of blood. This conclusion was drawn from the prevailing type of the epidemic, the class and condition of its subjects, and the tendency of the disease at any time to sink suddenly from a state of apparent exaltation to that of depression of all the vital

energies. When, therefore, violent vascular action was manifest, with burning surface, thirst, dry tongue, full and accelerated pulse, recourse was had to the administration of a mild solution of tartar emetic, and tepid sponging of the whole surface of the body. Often the milder refrigerants and the neutral mixture were substituted with good effect for the tartar-emetic, unless the bronchial or pulmonary tissues were involved. The intense cephalalgia was oftenest relieved by the application to the forehead of flannels dipped in hot vinegar and water; cold was sometimes preferred. Thirst was assuaged by demulcent drinks, or the effervescing draft, given frequently in small quantities. Frequent sponging, with tepid water or spirits and water, allayed the burning heat of the surface, to the great comfort of the patient. When the peculiar pungent odor from the body, referred to in the preceding description, was present, a mild solution of the chloride of soda was added to the mixture with good effect. Nausea and uneasiness of the stomach was relieved by a sinapism to the epigastrium. Sleep was induced at night by minute doses of the sulphate of morphia; from $\frac{1}{16}$ to $\frac{1}{8}$ of a grain of the solution, repeated once or twice at intervals of an hour, would often produce the desired effect. The general nervous disturbance where there was great sensitiveness, morbid vigilance, restlessness and subsultus, was allayed by camphor, either in the form of an emulsion or the ordinary camphor mixture of the pharmacopia. Not unfrequently would these means be followed by a gentle perspiration and relief of all the urgent symptoms.

As soon as signs of general exhaustion appeared, recourse was had to stimulants, which, once commenced, it was often necessary to continue throughout the whole course of the fever, even in the face of conditions commonly indicating an opposite plan. Nothing was more common than, while treating some serious local disturbance by depletive means, to continue at the same time vigorous stimulant measures, in order to keep the general system up to the vital point. Thus, oftentimes, would the patient seem to be borne along till the violence of the morbific influence was spent, and the vis medicatrix naturæ came kindly to his relief.

Of the stimulants, sherry and Madeira wines were chosen.

Combinations of a stimulant and tonic often produced a better effect. A mixture of sherry and the solution of the sulphate of quinine in equal parts was made, of which from ℥ ss. to ℥ i. was given every two hours, as the case required, or as the patient could bear. When the system had been much accustomed to strong drinks, brandy was preferred. Ale and porter were sometimes given, but seemed to answer better in the convalescent stage, when they are much relied on to sustain the strength; beef tea and the nourishing broths were administered at the same time with beneficial effects. In the advanced stages of the fever, when there is present muttering delirium, coma, involuntary evacuations, a fluttering pulse, cold extremities and rapid sinking of the powers of life, there were superadded to the above treatment stimulating injections, hot pediluvia, vigorous frictions to the spine, warmth to the surface, flying blisters, sinapisms to inside of thighs, legs and arms. The flagging energies would sometimes thus be arrested in desperate cases.

We cannot forbear, in this connection, to allude to a form of treatment first suggested and practised by Dr. Graves of Dublin in certain manifestations of typhus, and which was often employed by us in the epidemic under consideration. We mean the combination of tartar-emetic and opium given in the advanced stages of the fever. We are aware that much has been said in opposition to this treatment, as being empirical and irrational, equally potent for good and for evil, and many instances are cited in evidence of its uncertain effect. May not this be owing, in some measure, to a want of discrimination of the precise conditions that call for its use? With us it seemed particularly applicable to a class of patients in whom the disease assumed a *mixed* form, being a combination of the exalted and depressed types before alluded to; and when conjoined with much vascular excitement, manifested by a full, rapid, and bounding pulse, burning skin, hot head, and infected eyes, there was still evidence of the exhaustion of the vital energy, and the accompanying cerebral exaltation was not associated with inflammatory action. These conditions were present in many of our worst cases. They came in usually about the 10th or 12th day of the fever. The de-

lirium was violent in its manifestations,—of that busy and active kind peculiar to delirium tremens, and wholly different from the coma and stupor accompanying the purely low form of the disease. Restlessness, violent jactitation, and prolonged vigilance were among its distressing accompaniments. The patient must soon wear out under the unnatural excitement. In many instances of this nature, the mixture of Dr. Graves seemed to produce the desired effect, when all other means failed. What guided us most, and seemed from experience a sure indication for its use, was the state of the heart's action. If, conjoined with the assemblage of symptoms first noticed, its impulse was sufficiently strong to wishstand the sedative influence of the mixture, we unhesitatingly gave it, and looked with certainty for its beneficial effect. In many instances we have seen patients thus apparently snatched from inevitable death. In view of these results, we could not forbear the use of means, the rationale of whose action we confess we do not fully understand.

The following examples, briefly stated, will show the condition of the patients thus treated, and illustrate the effect of the medication in question:—

CASE 7.—The first case we shall bring forward is that of Neil McNulty, who came a passenger in the ship Washington, and was landed at the Quarantine Station on Deer Island, Dec. 14th, 1847, being in the ninth day of the fever. He was a young man about 19 years of age, of vigorous habit and previous sound health. The vessel from which he was taken was crowded with the fever, and had encountered a long and stormy passage.

This patient had received no treatment. When he entered the wards livid maculæ were abundant over the whole body; he had a crisp, dry, contracted tongue; teeth and lips loaded with black sordes; hard, full, and very rapid pulse; pungent and burning heat of skin; peculiar nauseous odor from the body; hurried breathing, and involuntary passages of stools and urine. He had intense headache, flushed, almost livid face; a fiery eye, and great nervous agitation. In defiance of the usual modes of active treatment, he rapidly grew worse.

The following day delirium of an exciting kind came on, accompanied by incoherent muttering, and raving by turns. He had slept none since he came into the ward. All the symptoms before named were aggravated in degree. He was now ordered a combination of tartar-emetic, laudanum and camphor in the following form—

℞. Antim. et tart. pot. gr. iv.
Tinct. Opii, 3j.
Mist. Camphoræ viij. at.

Of this mixture a tablespoonful to be given every half hour till three doses have been taken, after that every hour till sleep ensues. A blister was also applied to nape of the neck, and sinapisms to inside of thighs and legs. After the fourth or fifth dose of the mixture, the patient fell into a quiet sleep, which lasted eight or ten hours. He awoke wonderfully refreshed, and with all unfavorable symptoms manifestly relieved. The tendency to delirium was, however, still evident, and the general nervousness continued though in less degree. The antimonial mixture was here omitted for the greater part of a day, and other measures substituted; but the symptoms becoming aggravated, it was at once resumed, being now administered at longer intervals, and its effects carefully watched. From this time the patient passed rapidly on to convalescence and recovery.

It will be seen, that in this case we had to deal with a patient who had been neglected during the first eight or ten days of the disease, and on whom the fever had fastened with strong grasp, and developed its most alarming symptoms. Here were the burning heat of surface, the dry and crisped tongue, the irregular respiration, hard pulse, ferrety eye, and intense cephalalgia, which pointed to severe cerebral disturbance, with excited, nervous and vascular action.

At first we had directed our attention to the general condition, and plied vigorously the usual active remedies, being slow to adopt a practice which some had condemned as empirical and unphilosophical. In 36 or 48 hours after we find the whole condition of the patient worse. There is added, delirium and furious raving; the general subsultus increases, and there is persistent watchfulness,—symptoms which expe-

rience had taught us were most to be dreaded. At this juncture the mixture is tried as a last resort, and with almost magical effect.

CASE 8.—P. M., aged about 17, sanguine temperament, strong and robust frame; had been six months in this country. He was brought into the hospital on the 9th of December, when the fever had reached its 8th or 9th day. Had, on admission, maculæ of livid hue covering thickly the abdomen, chest, extremities and back; dry, harsh and burning hot skin; teeth and gums coated with black sordes; tongue swollen, dry and cracked, protruded with great difficulty; eyes red and suffused; pulse 140, full and bounding; breathing frequent, difficult, very irregular, being in one minute double its frequency at another. A strong, disagreeable odor emanated from the body; urine and fæces passed involuntarily, and very fetid. He had furious delirium, talked and raved incessantly, and made frequent attempts to get out of bed; universal tremors and subsultus. He had slept none for several days. Directed to remove the hair and apply a large blister to the back of the head and nape of neck; stimulating pediluvia; sinapisms to the calves of the legs. Also, ordered a draught composed of four drachms of camphor water, five drops of laudanum and $\frac{1}{4}$ of a grain of tartar-emetic, to be given every hour till three doses have been taken; then to be continued every second hour during the night, unless sleep supervenes.

On the following morning it was found that no good sleep had been procured, but there was manifest improvement of all the symptoms. The delirium was calmer; the nervous agitation abated; pulse diminished in frequency, full and soft. The surface had become moist, but the intense pungent heat remained. The same plan of treatment was continued several days, the mixture being given at longer or shorter intervals, and in doses varying with the urgency of the symptoms. Two or three times it was omitted, but, matters invariably growing worse, was resumed always with benefit.

The crisis in this case was delayed till about the 17th day, and the patient seemed meanwhile to *rest* upon the tartar-emetic treatment. A favorable crisis now appeared and con-

valescence was fully established. This patient was three times blistered on the back of the head, and took twenty to twenty-four ounces of the mixture.

CASE 9. resembles in its main features the two preceding. The subject here was 45 years old, a strong and robust man, in full health previously, but addicted to intemperate habits. He first came under our notice on the 27th day of December, in an advanced stage of the fever. Had then livid maculæ on every part of the body, except the face and neck, but presented no symptom calculated to excite alarm, excepting a noticeable degree of general nervous agitation. He was ordered five grains of camphor in emulsion every fourth hour, Dover's powder, gr. x., nocte.

Dec. 28th.—Got the value of half an hour's troubled sleep in all the night. Appeared in much the same condition as yesterday. Increase amount of camphor; sol. sulph. morphiæ gr. $\frac{1}{4}$, repeated every hour till half a grain is taken, unless sleep is procured; blisters; sinapisms.

Dec. 29th.—Patient has had no sleep since last visit. The nurse reports him to have been exceedingly restless and troublesome during the night. This morning appears in a state of active and busy delirium, closely resembling that seen in the subjects of delirium tremens. There is constant and universal tremor, violent raving and struggling; the eyes in rapid motion, glistening and ferrety from constant wakefulness; jactitation extreme; pulse scarcely to be counted. When asked to put out his tongue, it is protruded quickly and withdrawn with a jerk, accompanied with a violent closure of the jaws. Answers questions and obeys directions with alacrity, but relapses instantly into a state of busy delirium. The preceding prescriptions having failed of their usual effect, he was ordered a mixture composed of camphor water ℥ viii., tartar-emetic gr. ii., tinct. opii ʒ ii. Of this to take ℥ ss. every hour till the effect is manifest.

Dec. 30th.—Nurse reports that after the 3d or 4th dose of the mixture the patient fell into a deep and quiet sleep, which continued with one interruption till a late hour in the morning. Appears now every way improved; delirium wholly gone;

face more natural; exhibits only a slight degree of nervous tremor. Directed gr. ¼ antimony in ℥ss. camphor emulsion every fourth hour.

Dec. 31*st*—Still improving; some nervous agitation yet apparent; other unfavorable symptoms gone; to continue prescription of yesterday at shorter intervals.

January 1*st*, 1848.—Convalescent.

The preceding examples will show very fairly the operation of this treatment, though by no means our worst cases. The notes of several others, far more interesting and desperate, have been mislaid. The relative quantities of antimony and opium must be varied according to the circumstances of the case. The camphor mixture is usually the best vehicle for administration. Should this be contra-indicated, pure water may be substituted. The mixture has often the effect, after three or four doses given in the manner above described, to produce gentle but copious evacuations of yellow fæcal matter from the bowels, with great relief to the patient. We would again mention the need of judgment and discrimination in the employment of this mode of treatment. Our own experience dictates it should only be used in cases where the assemblage of conditions previously named are present. Then it is invaluable.

Complications and incidental affections ocurring in the acute stage.—These vary in their nature and degree of severity in different epidemics. In that at present under consideration, the brain and spinal cord were oftenest implicated. All the important viscera of the chest and abdomen were, however, liable to be attacked. Various anomalous symptoms would also appear in the course of the disease, which called for the exercise of judgment and discrimination in the use of remedial measures.

The modes of treatment adopted when the violence of the disease was determined to the head, have already been described. When the symptoms indicated that the base of the brain and medulla oblongata suffered most from the morbific effect, and there was perversion of the senses, and feeble and irregular respiratory action, with weak and *thready* pulse and nervous depression, local counter-irritation and revulsions were

conjoined with measures to counteract the general debility. Hot wine whey, or brandy, or both, flying blisters to various parts of the trunk, frictions along the spine and especially over the respiratory tract, sinapisms and stimulating pediluvia must be pushed boldly. Especially have we seen the best effects result from the application of a sinapism, or flannels wrung in hot water or aqua ammonia over the region of the medulla oblongata, and energetic friction of the spine between the shoulders, in cases of inequality and exhaustion of the respiratory power.

Laryngitis was seldom or never noticed. Bronchitis, alone or combined with partial pneumonia, was common, especially towards the close of the epidemic. Here, however, the symptoms were more those of congestion than active inflammation. There was a want of action rather than the over-action which characterizes these affections when a distinct disease, and the impediment to free aeration of the blood from accumulation of the altered secretions in the bronchial terminations, was more to be feared than the structural alteration. Hence the indication was to excite and stimulate the general action, while we sought to deplete and relieve the overloaded vessels of the parts involved by specific medicines and local applications. Dry cupping to various parts of the chest, blisters cautiously applied, irritants to the spine, and internally tartar-emetic in solution, were the means employed. Cough was allayed by expectorants of senega and squill. Wine and bark supported the general strength. These affections were the chief point of danger in subjects having a tendency to pulmonary complaints. Such patients often succumbed at an early period of the fever. In all the post-mortem examinations of typhus, there were marks of more or less congestion in the bronchia and lungs.

Gastritis, of a low form, was sometimes manifest. It was sometimes relieved by the administration of cool mucilaginous drinks, and ice in small quantities, with a sinapism or blister to the epigastrium. Leeches were sometimes indicated. The liver was not unfrequently affected, as manifested sometimes by depraved secretions, but more often by a total want of secretion. This condition of things would also, at times, be

accompanied by suppression of urine, and greatly increase the dangers of the case. Diarrhœa, in the acute stage, was not common. When present, it indicated the existence of irritated ingesta, and called for the employment of a mild, oleaginous purgative, with mucilaginous drinks, and fomentations to the abdomen. An opiate enema was sometimes required. Tympanites was also rarely seen, and then, could usually be traced to undue purgation, and inattention to diet, in patients admitted at an advanced stage of the fever. Too much indulgence in fluids, especially acid drinks, would bring it on occasionally. It was best treated, as suggested by Dr. Graves, by a turpentine stupe applied to the abdomen, and also the internal administration of turpentine, either by the mouth, or in the form of an enema.

Erysipelas of a non-malignant type occurred in a few instances.

Swelling of the parotid was an occasional concomitant of the fever, and proved a most troublesome and painful affection. It made its appearance towards the latter stages of the disease. Both glands were sometimes affected at the same time. They were found difficult to discuss by the usual measures; laying them open by the scalpel seemed to produce but little good effect. Most relief was produced by fomentations with hot vinegar, and infusion of hop. They commonly went into suppuration, to the great annoyance and suffering, and extreme exhaustion of the patient. This affection occurred oftenest in the scrofulous habit, and when the patient had undergone a combination of privations previous to admission to the wards.

In two or three of the most malignant cases, hemorrhage from the nostrils took place, which was uncontrollable except by plugging the posterior nases. In this way, the patient's life was sometimes prolonged a few hours; the blood which flowed was in a state of absolute putridity.

Spasms and convulsions were noticed in a few instances, and were almost invariably fatal symptoms. They existed in an aggravated form in the case of Capt. Chandler, the superintendent of the House of Industry, who died at that institution of typhus in June 1847.

A curious affection, which often presented at some period

of the convalescence, was the occurrence of severe aching pains in the extremities. These pains were represented by the patient as very violent, and (it was frequently remarked) occasioned more complaining on the part of the sufferer, than any other symptom throughout the whole course of the disease. They were referred chiefly to the bones of the legs and arms. At first they were disregarded, but afterwards successfully treated with the solution of the iodide of potassium, an experiment suggested by Dr. Stedman (then superintending physician to the hospitals at South Boston), from the known efficacy of this remedy in the pains of tertiary syphilis, to which, both in kind and degree, those in question were strongly analogous. A few doses often sufficed to give complete and permanent relief.

Sequelæ, or secondary affection of typhus.—We have before alluded to the severe parotitis which sometimes presented, and which, perhaps, should rather be classed among the sequelæ or secondary effects of the disease, inasmuch as it came in at a late period, and seemed a residuary action of the previous poison in a vitiated system. Sloughing ulcers upon the scapulæ and sacrum occurred in some protracted cases. They were best treated by a strengthening diet, tonics, and the application to the parts of antiseptic and astringent washes.

But by far the most grave and frequent sequel to the fever, (and which, in our own mind, is deserving of equal consideration in its pathology and treatment with the acute stage,) was the peculiar *intestinal affection*, to which allusion has been made in a former part of this paper. It commonly made its appearance during the latter stages of convalescence, and was brought on by imprudence in diet, especially if accompanied by premature exposure to cold and wet. But sometimes it could be traced to no satisfactory cause. Its importance in a therapeutical view will be recognized, when we state that, at both the hospitals named, it was the cause of the majority of all the deaths that occurred from typhus, up to the time the autopsies, detailed in the following cases were made. To the consideration of this affection, the attention of the writer was early directed at the House of Industry in the spring of 1847. Its intractability to the ordinary remedial measures, and its

almost invariably fatal termination were well calculated to rouse inquiry and investigation. We had been able to find no account of its morbid anatomy among the British writers, and had, up to this time, made no post-mortem examination of such cases. With a view to ascertain, if possible, the pathology of this sequel to the fever, on which might be based a rational plan of treatment, a series of clinical and autopsical investigations were instituted, the results of which are given in the pages which follow. These results, so far as we can learn, had previously been unknown, or wholly overlooked. To our view, they have an important bearing on the therapeutical management of the fever, in both its primary and secondary forms, and will tend to throw light upon the mooted points in its pathology.* The autopsies of the next few cases represent fairly the pathological phenomena found in the secondary disease.

CASE 10.—Catharine Cochland, 24 years of age, born in Ireland, was admitted to Deer Island Hospital 22d Nov., 1847. She was of medium size and stature—rather delicate constitution, with a tendency to the scrofulous diathesis. She had been eight months in this country. When first admitted to the wards she was laboring under a severe attack of maculated typhus, which had then reached the sixth day. From this she recovered without any marked phenomena, with the exception of a slight attack of diarrhœa, which came on in an advanced stage of the fever, but yielded readily to the usual remedies.

During the latter period of her convalescence she partook freely of forbidden articles of diet, which was followed by

* The writer deems it proper to remark, that the peculiar pathological conditions described in this paper, and shown in the accompanying plates, are the result of his own personal observation and researches, though they have subsequently been alluded to and quoted by authors in a manner that did not leave this fact entirely clear. They were first noticed by him at Deer Island Hospital, in December, 1847, while pursuing a system of dissections in typhus, aided by Dr. C. A. Walker, one of the resident physicians at that institution; previous to which time, no autopsies of this disease had ever been made on the island.

diarrhœa in an aggravated form. This state of things she carefully concealed for two or three days from her nurse and medical attendants, when her rapidly failing strength attracted notice.

This was on the 23d December, at which time she had frequent discharges of thin, yellowish white frothy liquid, of very fetid odor. She had a flabby red tongue, feeble pulse, cool skin, and great general prostration, but complained of no pain. Her abdomen was full and soft, somewhat tender on pressure.

Dec. 24th.—No improvement—prostration great—stools frequent, very fetid, assume a darker hue—are mixed with large quantities of depraved secretions.

For three or four days following no improvement was observed; stools became more frequent, dark and offensive—strength rapidly failed. She died Dec. 30th, 6 o'clock, A. M.

Autopsy, 12 hours after death.—But little emaciation; no wasting of muscles; very slight depression of supra-clavicular region, more apparent on left side—in other respects chest presents nothing remarkable externally. Some tympanites of abdomen.

Interior of head, neck and thorax not examined.

Abdomen.—A layer of fat a fourth of an inch in thickness beneath the skin. On removing the integuments, contents of the cavity presented nothing remarkable externally. Omentum contained a moderate quantity of fat. Liver perfectly normal. Gall-bladder normal in size and appearance externally; filled with a dark, tenacious, tarry fluid. Spleen of natural size, color, and consistence. Pancreas normal. Stomach normal externally, contains half-a-pint of thin, greenish fluid; internal lining membrane of healthy color and consistence; natural secretion abundant.

Intestines.—Externally, discolored from about the commencement of the ileum, onward throughout the remainder of their extent. This apparent discoloration seemed rather an opacity of the walls, resulting from the affection of the internal lining membrane; it was most marked along the lower three feet of ileum. There were extensive old adhesions of ascending colon to parietes of abdomen. Internally, duodenum nor-

mal. Jejunum somewhat congested and discolored at its lower portion. Ileum has its internal lining uniformly discolored and congested; in its upper third the membrane becomes sensibly thickened, which thickening gradually increases till within two or three feet from the ileo-cœcal valve, when it continues for the remaining distance the same. From about five feet above ileo-cœcal valve downward, the mucous membrane puts on a peculiar appearance. The thickening here amounts to real hypertrophy, and appears in the form of transverse *ridges* thickly crowded together, completely encircling the intestine, and raised from a line and a half to two lines above the general surface; these ridges terminate abruptly at the border of Peyer's patches, giving to them a depressed appearance, which at first led to the supposition that they were ulcerated or otherwise altered from their normal condition; but on a careful examination these glands were found unaffected, the mucous membrane over them being entire and normal.*

The Large intestine in the cœcum, ascending and first half of transverse colon, reveals its internal lining somewhat thickened, with occasional patches of ulceration not extensive or deep; from about the middle of transverse colon these superficial ulcerations become more numerous; near the angle formed by the transverse and descending portions, the thickening is suddenly much increased, with hypertrophy of the muscular coat, much diminishing, for the space of a couple of inches, the calibre of the tube. This last has the appearance of being an old lesion. Just above this point the intestine is sacculated, and the ulcerative points more numerous, deep and extensive. Along the descending colon and upper half of the rectum the ulcerations and thickening are still more manifest. The internal surface of this intestine is blackened throughout. The ulcerations are confined to the mucous coat, irregular and varied in size, covered with a foul sanious exudation.

Of the mesenteric glands, some few at upper portion exhibited chronic enlargement, apparently of long standing; two or three towards lower portions of ileum were slightly enlarged

* See plate I.

and evidently somewhat inflamed—while others still were partly filled with tubercular matter, both in its crude and softened state. The glands of Brunner and the isolated follicles were not noticed.

Remaining contents of abdomen normal.

The patient complained of very little pain throughout. The intellect was unaffected.

The interior of the head and chest were not examined, the autopsy being necessarily made in the evening, after an unusually laborious and depressing attendance in the fever wards of the Hospital. From the constitution and previous history of the patient, we might infer that considerable alterations would have been found in the lungs—but it is not probable that either the chest or head would have revealed changes having any important connection with the peculiar lesions found in the intestinal tract.

CASE 11.—James Warnock, aged 37, in previous good health, was admitted to Deer Island Hospital Dec. 6th, with fever. He had been several days ill.

It was a marked case of maculated typhus, of medium severity. There was no diarrhœa during the acute stage. The disease was of the average duration.

The patient recovered from the fever with no untoward symptom. He had been transferred to the convalescent ward, and for two or three days had been able to leave his bed and walk about the room. He had a strong appetite, and, contrary to injunctions, partook prematurely, though in moderate quantity, of solid diet. Immediately after (the 2d of January), he was seized with diarrhœa. He had at first six or eight discharges in the twenty-four hours, liquid, yellowish, and slimy. After two or three days the stools increased in frequency, deepened in color, were mixed with depraved secretions, became reddish, and finally almost black and very offensive.

The patient complained but little of pain in the abdomen; there was no tympanites, and slight tenderness on pressure. His strength failed rapidly, and he died January 11th, at 8 A. M.

Autopsy, 48 hours after death.—Subject well developed, large, muscular. Emaciation not marked. Chest large and full. Abdomen sunken, but not discolored.

On removal of integuments, contents of abdomen present the following appearances: Omentum contains a medium quantity of fat. Liver externally of somewhat deeper color than natural, its parenchyma congested but not disorganized. Gall-bladder large, distended to the utmost with a thick, tarry fluid. Pancreas, spleen and kidneys, normal.

Stomach normal externally; contains a pint of thin, grayish fluid. Internal lining covered with a grayish, tenacious mucus; mucous membrane itself slightly injected near pyloric orifice, otherwise normal in every part.

Intestines.—Externally there appears some discoloration of duodenum, and upper part of jejunum, more at lower half of ileum, descending colon and rectum. Both small and large intestines contain in every part a grayish, pultaceous fluid, in considerable quantity. A few small collections of fæcal matter, in color and consistence like chocolate, found in lower portion of ileum. Veins of submucous cellular tissue a little engorged in duodenum, and upper part of jejunum; mucous membrane in these portions natural, as also throughout remainder of jejunum and upper half of ileum, from which point injection begins to be marked, accompanied by thickening. This condition of the membrane increases till within about two and a half feet from ileo-cœcal valve, when both the congestion and thickening become strongly marked, appearing here and there, for the space of a few inches in extent, in the form of transverse lines raised from the general surface. Near the ileo-cœcal valve, to the extent of four inches, this ridged appearance is remarkable—the elevations being from a line to a line and a half in height, and one or two lines in breadth. Within a couple of inches of the cœcum are observed a few points of ulceration, of the size of a pin's head, extending partly through the mucous coat. In but one instance are Peyer's patches visible; it here presenting in a slight degree the shaven-beard appearance, the thickening elsewhere noticed ceasing at the border of the patch, giving it a depressed appearance. The cœcal extremity of colon shows considerable

congestion and thickening, with commencing points of ulceration; these appearances increase along the ascending and transverse portions, and are still more marked in descending portion and upper part of rectum. None of the ulcerations in this case exceed in size a split pea; they are confined to the mucous coat.

There is no alteration of mesenteric glands. Remaining contents of abdomen normal.

CASE 12.—Patrick Lochlin, 25 years of age, was admitted to Hospital on Deer Island, Oct. 20th, being then in the initiatory stage of the fever. His previous health had been good.

The fever was well marked, severe and protracted. Convalescence was proportionally slow, but complete. The patient had left the wards, and had been engaged in out-door employment for two or three days, when diarrhœa set in. This was on the 12th of December. The discharges at first amounted to not more than four or five in the twenty-four hours. They were liquid, yellowish, mingled with mucus, not very offensive. Once or twice they were checked by the powders of ipecac, and opium, assisted by the acetate of lead. The abdomen was sunken, somewhat tender on pressure. The symptoms gradually assumed a graver character; prostration became marked; the stools were more frequent, darker in hue, became mingled with depraved mucus and blood, and were very fetid. For the last four or five days they were of a slaty color, passed almost constantly and involuntarily.

Death occurred on the 13th January. The patient had throughout no tympanites, and the soreness and tenderness on pressure were not very marked. He made no complaint, but bore upon his face a peculiar expression of anxiety and suffering. His intellect was unaffected.

Autopsy, 4 hours after death.—Subject of medium size, well developed; much emaciation. Chest full, resonant. Abdomen sunken; but a thin tissue of fat beneath the skin over chest and abdomen.

Cavity of abdomen.—Omentum free from fat. Right lobe of liver a little darker than natural externally; structure of same lobe rather darker than usual in its right half; in other respects this viscus normal. Pancreas normal. Spleen natural in size;

its texture disorganized to the extent of an inch and a half on its upper extremity, and presents here a superficial abscess three quarters of an inch in diameter, filled with ill-conditioned pus. Kidneys normal. Stomach externally normal; contains a pint of thin greenish fluid; its mucous lining, to the extent of three or four inches around cardiac orifice, studded with minute red points, mostly gathered in clusters from half to three quarters of an inch in diameter; its texture normal in all its extent.

Intestines.—Externally appear a little discolored in duodenum and first part of jejunum; this dark color (opacity) becomes evident again and more marked at beginning of ileum and increases as we descend the tube; in large intestines it is most apparent in descending colon and upper half of rectum. Duodenum and upper portions of jejunum contain a greenish fluid: ileum and colon moderately filled with a grayish semi-fluid matter adherent to their walls. Mucous membrane of duodenum is considerably congested; that of upper portion of jejunum is also darker than usual, but presents no marked injection or thickening; texture normal. Valvulæ conniventes in their natural condition.

In the upper portions of ileum the dark color and thickening of mucous membrane becomes manifest; these conditions decrease as we descend the canal, and are most marked about four feet above ileo-cœcal valve. The thickening along lower two thirds of ileum assumes the form of rough, prominent ridges, blackened on their summits. These prominences are at first inconsiderable, and separated by an interval of three to six lines; farther on they are increased in number, as also in breadth and height; four feet above ileo-cœcal valve they resemble hypertrophied valvulæ conniventes, being a line apart, and elevated from one to two lines, hard, some of them serrated on their summits; they continue thus till within two or three inches from the cœcum. The ridges extend completely around the intestine unless intercepted by the patches of Peyer, in which case the elevation terminates abruptly at the border of the patch and recommences on the opposite side. The patches are therefore apparently depressed; and are covered with a dark coating of depraved secretion, which is readily scraped off by the scalpel, revealing the membrane beneath

entire. At the junction with the cœcum, for the space of three or four inches, the mucous surface appears roughened, granulated, with here and there a few thin flakes of a lymph-like substance. Some few of the solitary glands are here visible, raised and somewhat reddened, and interspersed are a few points of ulceration.*

The cœcum exhibits the solitary glands enlarged, inflamed, surrounded each with a distinct red border, the central point being in some instances ulcerated; there is also thickening and injection of the mucous lining, with accompanying hypertrophy of the muscular coat. These conditions observed along the ascending colon—less in its tranverse portion—again very marked in descending portion. The interior of large intestine throughout is much thickened and roughened; in the descending colon and upper part of the rectum the mucous coat is extensively ulcerated.†

No alteration of mesenteric glands. Remaining contents of abdomen normal.

CASE 13.—Michael McCall, aged 23, was admitted to Deer Island Hospital on the 28th December—three days ill. The fever was distinctly marked, though of a mild form. It early assumed the depressing type, demanding after the first week the cautious but constant employment of stimulants and tonics. The disease was of short duration. It presented no distinct crisis, was marked by no delirium, no diarrhœa or tympanites. Convalescence was rapid and complete. On Sunday, January 10th, permission was given the patient to dress and walk about the wards. This he did, however, for the first time on Tuesday following. Next day the nurse reported him to have had, during the night previous, four large liquid yellow stools. He complained of no pain. Abdomen slightly tender on pressure; no tympanites. It was found upon inquiry that he had partaken the day before of forbidden articles of diet. The stools increased in frequency. On Friday night following they became dark, bloody, jelly-like and extremely offensive. He was greatly exhausted. Patient complained of but little pain; there was no meteorism; intellect clear throughout. Death took place about noon on the 23d.

* Plate I. figs. 3 & 4, and plate II. fig. 1. † Plate II. figs. 2, 3.

Autopsy, 48 hours after death.—Externally—but little emaciation; marked rigidity; no discoloration of surface; chest full and resonant; abdomen sunken.

Abdomen.—Adeps one fourth of an inch in thickness beneath the skin; omentum has also a medium quantity of fat. Liver of usual size and color; superficially shows a few stains like ecchymosed spots; texture normal; vessels filled with fluid black blood. Gall-bladder distended with a tenacious molasses-like fluid. Spleen rather below the average size; color and texture normal. Pancreas and kidneys healthy.

Stomach.—Externally normal; uniform reddening, extending along most of lesser as also cardiac half of greater curve, is seen through the translucent outer coat. Contains in its cavity five ounces of grayish fluid. Its internal lining thickly studded with minute red points in those portions corresponding with the apparent reddening externally.

Intestines.—Externally, duodenum and jejunum natural; ileum and colon appear somewhat discolored throughout whole extent—no considerable opacity of their walls. Jejunum and ileum empty, and somewhat contracted. Large intestines contain only a pultaceous grayish matter. Internally, duodenum and jejunum normal; in upper portion of ileum congestion becomes manifest, and from about its middle, onward through all its extent, lining membrane of ileum is much injected, thickened and opaque. In one or two instances only, to the extent of three or four inches, the thickening appears in the form of elevated transverse lines, only partly encircling the intestine, and from four to six lines apart. This is about the commencement of lower third of ileum. Peyer's patches are in several instances distinctly visible, but not materially altered. Brunner's and isolated follicles not developed. The large intestine shows its mucous lining throughout injected and thickened. In descending colon and rectum these appearances are most remarked, the lining membrane being here intensely reddened in patches and thickened irregularly.*

The solitary glands are also manifest in descending colon, slightly raised and inflamed, appearing like minute pustules on

* Plate II. fig. 3.

the surface of the membrane. No ulcerations noticed in any part of intestinal tract.

Mesenteric glands small and firm. Remaining contents of abdomen normal.

CASE 14.—Philip McGonagle, æt. 16, of sanguine habit and strong make, was admitted to Quarantine Hospital Dec. 9th, about the eighth day of fever. He had all the symptoms of maculated typhus in a marked degree. The fever continued, with uncommon severity, nine days longer, when a distinct crisis occurred. There was no diarrhœa in the acute stage.

Convalescence had gone on rapidly and favorably till the 1st January following, at which time the patient had an imperfect relapse; from this, also, he recovered completely, and had been allowed to dress and walk about the room. His appetite was strong, but he was restricted to the use of bland farinaceous articles, together with the lighter broths. This injunction, however, he did not regard, and found means to partake rather freely of solid diet.

About this time, forty-five days from the first accession of fever, and fifteen from the period of relapse, he was seized with secondary diarrhœa. There were at first five or six discharges in the twenty-four hours, copious, liquid and slimy, unattended with much pain. There was no tympanites and but little tenderness on pressure. The symptoms increased daily in severity. Patient failed rapidly in strength. His countenance assumed a peculiar expression of anxiety, stools became more frequent and fetid, were mixed with depraved secretions and with blood, and for two or three days preceding his death passed involuntarily. In the latter stage of the affection there existed constant dull pain in the bowels, and considerable tenderness on pressure. The mind was unaffected.

Death occurred Monday, January 24th, at 2 A. M.

Autopsy, 32 hours after death.—Subject of medium size, much emaciated. Considerable rigidity of muscles. Chest capacious, resonant. Abdomen sunken and discolored. Subcellular tissue of chest and abdomen contains but little fat.

Cavity of abdomen.—Omentum thin and transparent. Liver natural in size; superficially around gall-bladder, as also

on most of under surface of right lobe, of deep bluish-black color; structure normal. Gall-bladder greenish yellow externally; moderately distended with a fluid like molasses in consistence and color. Kidneys healthy. Spleen a fourth larger than usual, natural externally; contents dark and grumous; structure natural.

Stomach contains a pint of greenish watery fluid; its mucous lining shows nothing remarkable.

Intestines.—Externally ileum appears discolored along its whole course, in lower two thirds opaque; veins along line of mesenteric attachment distinct, dark, congested. Colon uniformly discolored, of greenish tinge. Ileum and colon moderately filled with a grayish pultaceous mass. Internal lining of duodenum somewhat darker than usual; that of lower portion of jejunum slightly reddened in patches. In upper portion of ileum injection becomes uniform and marked, and a tendency to thickening in the form of transverse parallel lines is apparent; throughout its lower two thirds, with the exception of an occasional interval of three or four inches, well-marked prominent ridges appear, completely encircling the cavity of the intestine, unless broken by the intervention of the patches of Peyer.* At first these ridges are about half a line in height, the same in breadth, and three or four lines apart. About seven feet from ileo-cœcal valve they are more numerous, broader and more prominent; two and a half feet lower they attain their maximum, being at this point crowded thickly together, a line and a half in breadth and two lines or more in height. On their summits is a greenish-black deposit, which can be readily scraped off with the scalpel. The interspaces are brilliantly injected high up in the ileum, while its lower portions present a dark uniform congestion. The ridges do not exist within three or four inches of valve. The glands of Peyer are distinctly seen along whole course of ileum, like white patches depressed, presenting the indented and dotted appearance, their mucous covering entire. Brunner's and isolated glands not discernible. No traces of ulceration in any part of small intestines.

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* Plate I. figs. 1, 2, 3.

In the cœcum the isolated follicles are seen appearing like minute dark points. Throughout the colon thickening is very marked, and appears in irregular elevations, blackened on their summits. In the interspaces is seen the same vivid injection noticed in the upper portions of ileum. Here and there are appearances of a lymph-like exudation, but which cannot be scraped off by the scalpel. These conditions are less marked in the transverse portion. The rectum is uniformly blackened and much thickened. A few superficial ulcerations of the size of a pin-head are scattered throughout the large intestine.* Mesenteric glands firm, varying in size from that of a millet seed to a large pea. Bladder normal.†

The average duration of the fever in the five cases first adduced, was sixteen days; that of the secondary affection, thirteen days. The period in the convalescence in which diarrhœa first manifested itself, was the nineteenth day; and from the first accession of fever, the forty-seventh, which last two conditions would fall short were a larger number of cases given.

It will be seen that, in addition to the alterations in the large intestines, certain well-marked and peculiar lesions found in the *ileum*, characterize the pathology of the secondary affection. In all the subjects examined, these lesions were more or less developed. They are found very prominent in three of the five cases above presented, less marked in the other two. It is worthy of notice, that, in the latter, the preceding fever was milder and of shorter duration.

It would seem that there exists an intimate connection between the conditions of the intestinal tract in primary typhus, and the changes which occur in the small intestines in the secondary disease: the latter correspond in situation with the uniform congestion and discoloration pointed out in the preceding autopsies of subjects that died in the acute stage of the

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* Plate II. figures 2 and 3.

† These cases are taken from an article by the writer published in the January and February numbers of the Boston Medical and Surgical Journal for 1848, entitled "*Clinical Notes and Post-Mortem Illustrations of Typhus or Ship Fever.*"

fever. From these analogies, we were led to reflect upon the probability of a particular direction to these parts of the morbific influence from the first, and thereby induced to modify our treatment in the acute stage, so far as to avoid, from the commencement, all that could irritate these sensitive portions of the digestive tube, whether as food, drink, or medicines; believing that these specific morbid effects could better thus be avoided than remedied when once induced. We had before been accustomed, in the formative stage of the fever, to give in conjunction with an emetic, a strong purgative, with a view to aid, by the revulsive effect thus produced on the intestinal surface, in arresting the course of the disease in limine. But after the discovery of these peculiar pathological conditions of the secondary affection, this practice was wholly abandoned. None but mild oleaginous purgatives were prescribed, and the blandest nutriment and drinks allowed from first to last, both during the active period of the fever and the stage of convalescence. The effect of this change was immediately apparent. The ratio of mortality (in the belief of the writer) was diminished at least one-third.

For a more perfect understanding of these important lesions, the attention of the reader is directed to the accompanying lithographs, which were obtained from daguerreotype impressions, taken by Mr. I. A. Whipple from the specimens themselves, immediately after their removal from the body.* Sections of the whole portion of the intestinal tract affected are given in order, beginning at the upper part of the ileum and ending with the sigmoid flexure of the colon; showing with exactness and fidelity the morbid appearances discovered in the cases first described.

No form of treatment adopted during the actual occurrence of the dysenteric affection proved satisfactory. The following seemed the best, after repeated trials: Diet restricted solely to the use of unirritating articles; mucilaginous drinks only allowed. External irritants applied freely to the abdomen, of

* Several accurate colored sketches of these lesions were also made by Mr. Seagur, the artist, which are deposited in the Pathological Cabinet of the Boston Society for Medical Improvement.

which the turpentine stupe seemed to answer best. Internally, the medication consisted of the administration of Dover's powder in small doses frequently repeated, and of opium combined with the acetate of lead. This last combination seemed to produce more effect than the usual opiate remedies heretofore employed. Conjoined with these measures, recourse was had to injections of starch mucilage, alone and in combination with laudanum, or the nitrate of silver in solution. Efforts were made to apply these remedies more directly to the parts implicated, by first introducing a flexible tube far up into the intestine, to which a syringe was attached, and thence the contents forced into the bowel. As the vital energies flagged, stimulants were given, warmth applied to the extremities, and sinapisms and flying blisters to various points.

Treatment during convalescence.—We have stated in the preceding pages the period in convalescence when the secondary diarrhœa was most likely to occur. The patient could not be considered safe till the expiration of three or four weeks from its commencement. Too much care as to premature exposure or indiscretion in diet, however slight, cannot be observed. The appetite meanwhile is of course craving.* Demulcent drinks, especially solutions of gum arabic, seem well adapted to this period, being nutritious and at the same time unirritating. The milder farinaceous articles should be added by degrees. Relapses of the *primary* fever were invariably milder and of shorter duration than the first attack; the febrile action would run high for a few days, but the graver symptoms were not present. The maculæ did not reappear. We do not recollect to have witnessed a second attack of genuine typhus after a full recovery.

We have thus endeavored to give briefly the results of our personal experience and researches in this fever during the year of its first extensive appearance upon our shores as an epidemic. Its general history, nature and pathology, could not be fully considered in this connection but by making this

* On one occasion several convalescent patients under these restrictions escaped from the wards at night, and gained access to a neighboring cornfield, where they partook freely of the unripe fruit. The fatal diarrhœa soon followed, without mercy.

dissertation longer than is consistent with its publication here. These observations extend to about sixteen hundred cases which came under our treatment.

During the past season the writer has had opportunity to witness the fever as it appeared at the Emigrants' Hospital on Ward's Island and the Marine Hospital in New-York. The main features of the disease at these stations, so far as could be ascertained, harmonize well with those in the epidemic above described. The secondary dysenteric affection had existed, and was of a similar intractable and fatal type. Erysipelas and extensive swelling of the parotid glands had been frequent during the past season.*

The whole subject in question is replete with interest, and seems destined to occupy a full share of the attention of the medical profession in this country. From the intimate relations we are to hold with the Old World, the nationality of this disease will soon be lost, and the typhus fever of Great Britain become also the true typhus of America—differing in all its essential points from the dothinentérite, which is endemic here, by as much as variola differs from scarlatina. It is to be hoped that the facts and appearances connected with the visitations of this malady, at various points along our coast and in the interior, will be carefully collected and given to the public with impartiality and candor, that we may at length obtain materials sufficient to enable us to form a just estimate of the character of a fever yet obscure in many of its points, and whose eccentricities have tended much to confuse and perplex the minds of those who know it only as revealed in some particular locality, or as confined to a single epidemic.

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* The fever prevailed last winter at the Baltimore Alms House in a peculiarly malignant form, about 33 *per cent.* of all the cases proving fatal. For a full description of this epidemic, see the instructive paper of Dr. Wynne, published in the April number of the Amer. Jour. of Medical Sciences, Phila.

ART. II.—*On Suppurative Inflammation of the Knee Joint; with Cases and Remarks.* By JOHN O. STONE, M. D., one of the Surgeons to Bellevue Hospital.*

IT has seemed to me that the *dangers* arising from suppuration of the knee joint have not been fully appreciated, or if known, that the *treatment* best calculated to obviate them has not been established. My object in the following paper is to direct attention to these neglected points. I shall therefore present my cases in the order that they occurred, with such remarks from others as have, from time to time, fallen under my notice.

In the year 1847, I. L., of Jersey City, consulted me for a diseased knee, which had already troubled him for four years. His age was 45. His knee was red, tumid, had a gelatinous feel, and was painful on exercise. He had lately suspended all treatment, and was deliberating upon the question of amputation which had been recommended. His pulse was natural, only 70 a minute. His appetite good, and the case was regarded as one well suited for trying the beneficial effects of further treatment.

I rendered the knee immovable by means of pasteboard splints and starch bandages, gave iodine, hydriodate of potash, and the different preparations of iron, &c.

The pain soon left the limb, and was not felt unless the foot was struck, or the heel caught while walking, which he was encouraged to do by the aid of crutches, on account of his feeble health.

This treatment, with frictions with various ointments, was continued without much change for nine or ten months, when small camphor moxas were applied to the knee; these usually healed after a short time had elapsed, but at one of my visits I discovered that one of the burnt spots had not healed, and that it discharged a thin glairy fluid. No new symptom appeared until a week afterwards, then the knee swelled, and became exquisitely painful. The active symptoms subsided, and a free discharge of pus and serum followed. The discharge,

* Read before the Society for Med. Inquiry, June, 1851.

which consisted of pus and serum, but chiefly the latter, could be pressed from three to four inches above the patella, on each side of the rectus tendon, and air having entered the openings, gave to the fingers a peculiar boggy sensation.

New openings formed, and he became so much reduced, that his life was despaired of. By means of brandy and other stimuli, he was raised from great weakness to a state of comparative strength and freedom from pain. The question of amputation suggested itself, and was much meditated upon. But both limbs became much swelled from œdema as high as the top of the thighs, and the scrotum also was dropsical.

It was not thought proper to amputate under such circumstances; and an attempt was made, by raising the limbs, to promote absorption of the fluid.

But a troublesome cough came on, with other symptoms of tubercles in his lungs. During the month of June, he was taken with a diarrhœa, which reduced him to a very feeble state. Chalk mixture, laudanum, and tincture of catechu were given, and checked the diarrhœa, but the hot weather, and his various afflictions, sunk him lower and lower, and he died on the 16th of July. It is worthy of note, that during the latter period of his life, the swelling of the limbs subsided, apparently as if drained off through the openings about the knee.

I happened to be in his neighborhood on the day of his death, and examined the knee joint. The cartilages on the heads of the femur and tibia were nearly entirely removed by absorption, and the bones were bare and roughened. The cartilage of the patella was partially absorbed, and the bone here and there exposed. The cavities along and under the rectus tendon communicated with the joint.

By delaying to amputate when the patient first put himself under my care, a life was sacrificed. The reasons for delay were good, and yet he died from an unexpected ulceration of the synovial membrane, and, consequently, with suppuration in the joint, and an extension of the pus under and along the rectus tendon. To be thus defeated, when I had held out hopes to the patient, was a grievous disappointment.

I will not wait to discuss the interesting questions which

arise with regard to amputation, the effects of moxas, &c., but will only ask, as the disease advanced, and the joint became acutely inflamed, and filled with pus and synovial fluid, whether I should have amputated, or freely incised the joint?

As we proceed with our subject, the dangers of suppuration of the knee joint will be fully seen, and when it is shown that it may come on insidiously, and is full of peril, it will be confessed, I think, that all suggestions as to the treatment are worthy of the most serious consideration.

In the year 1849 I saw a thigh amputated and a large flow of matter followed the incision. The morbid appearances in the joint were similar to what I have detailed above.

The matter came from the knee joint through some ulceration of the synovial membrane, and thus extended up the thigh along the tendon of the rectus. The patient was much prostrated at the time of the operation, and survived it only a few days.

Since then I have witnessed other amputations in patients similarly affected, and the results were also unfortunate.

In connection with these cases I met with the following pertinent remarks in M. Lisfranc's "Clinique Chirurgicale:" he says, "Sometimes abscesses form *about* white swellings, and you must open them as quickly as possible; if you do not, they will form extensive collections under the skin and fistulæ will be established, which are cured with difficulty. If the walls of these purulent sacs inflame, the degeneration of the discharge or its excessive quantity will endanger your patient's life."

"In a case where there is fluctuation on a level with the joint and about it, the question will arise whether it is an effusion into the joint itself or only an abscess. We know that *the distended capsule will sometimes rise as high as the union of the lower with the middle third of the thigh, and if this capsule should be perforated by the matter the pus will extend far beyond these limits.* We know, too, that an abscess may be formed external to the joint, and so situated, back to back as it were with the capsule of the joint, as to render the diagnosis obscure. Examination of diseased limbs after death has proved the possible existence of these different pecu-

liarities, and I have seen a number of the most distinguished surgeons, who had met in consultation in such cases of difficult diagnosis, unable to agree; nor do I believe in the present state of our knowledge that a certain diagnosis can be made."

In another place he says, "Distrust all abscesses which lie two or three inches under the knee-joint. A patient in the hospital La Pitié, had been for a long time affected with a chronic disease of the knee; the inflammation being occasionally acute, and then again chronic. An abscess formed which was painful and hard, but soon softened; no fluctuation was ever felt; on being opened, a sero-purulent and flocculent discharge issued. Every thing went on well until the sixth day; then the joint, which heretofore showed no indications of effusion into its cavity, became filled with matter and air, and a violent fever arose, which compelled me to amputate the thigh. I then found an acute inflammation of the capsule of the joint, and a perforation of the capsule not greater than the heads of two pins united. I think that an ulcerative inflammation had opened the capsule, and that the opening was so small that no sense of fluctuation was communicated to the fingers between the matter in the abcess and the fluid in the joint; that in fact the matter had escaped from the joint into the abscess, but that the opening itself or the flocculent discharge acted like a valve to prevent its free return, and thus gave cause for the belief that the two collections were distinct and incommunicable."

Mr. Aston Key says, "That scrofulous joints are sometimes seized with acute synovial inflammation; suppuration rapidly ensues, and the failing of the patient's health and powers often require amputation of the limb." When the disease commences in the bone, synovial inflammation may succeed upon ulceration of the cartilage. If suppuration takes place in the cavity of the joint, the synovial membrane ulcerates and allows the matter to burrow between the muscles of the limb. Fistulous openings form at length, and tend in some measure to abate the patient's sufferings. The effect, however, in the constitution is such that amputation is usually resorted to for the preservation of life.

Mr. Brodie remarks that "extensive destruction of the

cartilages with suppuration may follow neglected synovial inflammation. But usually the ulceration of the cartilages precedes the synovitis, in which case the synovitis follows as a consequence of the formation of an abscess in the articular cavity. The history of the case must guide us in deciding where the disease originates, but wherever it may have originated when it has reached the suppurative stage, there is little prospect of benefit except in amputation of the limb."

Mr. Alcock has "known erosion of the cartilages to take place in five days," after inflammation of the synovial membrane has arisen from slight injuries.

There can be no necessity of multiplying evidence. These scattered views are sufficient to inform us, of the dangers attendant upon suppurative inflammation of the knee joint.

The following case next came under my care. It will be perceived, however, that the cause of the inflammation was a carious patella, and not as in the previous cases, a scrofulous affection of the knee. In relating it, I shall dwell especially on the treatment I felt warranted in recommending, from my past experience, supported as it is by the reasonable opinion held by the best military surgeons, that a large wound of a joint is much safer than a small one.

In November, 1850, John ——, a young and healthy Irishman, came under my care. Ten days previously he had twisted his knee, and an abscess had formed on the outer edge of the patella, which had been opened. At first sight, hopes were indulged, from the slightness of the constitutional symptoms, that he would do well without any interference. But inflammation of the joint soon came on, and the constitutional irritation was very severe. On passing a probe into the wound made before I had charge of him, I could touch the bare patella, and did actually remove a portion of it, in a carious state. The probe could be passed under the patella; and on pressing upon the patella, matter exuded, indicating that the joint was opened and suppurating. The smallness of the opening was an impediment to the free discharge of matter. Matter had also collected under the integuments, on each side of the joint, and was evacuated by free incisions.

A consultation was called, and all agreed as to the impro-

priety of immediate amputation. I then proposed to make an incision through the ligamentum patellæ into the joint, and at the same time to remove the carious patella. I was overruled, and it was decided to trust to position, diet, and stimuli.

The patient passed from under my care; for a time became better; the appetite good, and the pulse came down to 80. By the first of February, 1851, his health had gradually failed. Large abscesses had formed along the muscles of the thigh, and enfeebled as he was, it became necessary to amputate the limb. Shortly after this he died.

On examination of the joint, the patella was found to be carious. The femur and tibia were anchylosed without presenting any bare surfaces of bone. Abscesses were found to have extended up the thigh to a point higher than that at which the limb was amputated. The bone had been sawn just above the middle of the limb.

There is no doubt in this case, that the synovial inflammation was caused by the carious patella. A moment's thought would have led us to expect this as a natural consequence, for its cartilage is thin, and lies in close contact with the synovial membrane. The patient, as proved by the dissection, died from the collection of matter in the thigh after the morbid action in the joint had ceased, and anchylosis had been effected. I would ask, then, if the patella had been removed, and the joint freely opened, whether it would not have been reasonable to believe that anchylosis would have been promoted and the subsequent train of evils which followed and caused his death, have been avoided?

Let us review the reasons in support of this opinion:

The joint was already opened. Of this there was no diversity of sentiment. The matter, on account of the smallness of the outlet, distended the synovial capsule, and caused constitutional excitement. There was danger that the synovial membrane would become ulcerated at some other spot, and that the matter would extend up the thigh along the tendon of the rectus muscle; that if this should take place, the condition of the patient, which, up to this moment, had been hopeful, would become one full of danger. Constitutional irritation would increase; matter would burrow in the interstices of the muscles,

forming large abscesses in the limb, the sides of which would also become secreting surfaces of pus; the patient's strength would become exhausted, and we should probably be compelled, in order to escape from this desperate state of things, to amputate the limb when he was least able to bear it; that amputation was a very doubtful expedient, for it would probably hasten the fatal result. The patella was carious, and being a source of irritation, ought to be removed. Its removal would open the joint extensively, but, then, the matter would escape readily, and the constitutional symptoms, probably, at once subside. Matter, if allowed to remain in the joint, besides being an irritant, might also cause inflammation and caries of the ends of the bones. If a free incision should be made, no additional trouble would be caused, and we might expect anchylosis, the best result to be hoped for under any treatment. Experience in wounds in the joints had proved that large wounds, which gave a free discharge to matter, were less dangerous than small wounds. A mere inflammation of the synovial membrane does not cause constitutional irritation, provided that the matter can be freely discharged. And this is illustrated by those cases where amputation through joints, or excision of the heads of the bones, has been performed, where, of course, the synovial capsule covering the ends of the bones, must inflame, and yet, on account of the freedom with which the matter escapes, produces, in many instances, an inappreciable degree of excitement.

Before closing with this case we would make a quotation from Mr. Alcock, which confirms all we have said, and embodies the sentiments entertained by the best military authorities, whose experience on inflamed joints is far greater than is met with in civil practice. He says, "I am strongly inclined to the conclusion that injuries of the joints are not fatal in proportion to the extent of surface laid open. The most dangerous of these wounds I believe to be punctured, or such wounds as a musket ball creates. The most violent inflammatory action ensues in the highly susceptible synovial membrane. Fluid is effused and pent up, the whole limb becomes involved, the system takes the alarm, and sympathizes often to a fearful extent, &c." "Matter (he says in another place)

quickly erodes all the articulating surfaces. I have seen exceptions, but they are few. It burrows among the muscles, extending upwards and downwards, involving the whole limb in a disorganizing and suppurative disease. No sooner then is suppuration established than it becomes necessary to devise the best means of obtaining its evacuation, and to secure its draining off in proportion, or as fast as it forms. Any fears of the contact of air I cannot but think are out of place. The matter will do more mischief by being allowed to lodge. Counter openings in dependent positions, and free incisions either in the vicinity or if necessary *through the capsule, should be promptly and boldly practised.* Anchylosis is the happiest result that can be looked for, and the patient who so escapes has reason to be well satisfied that he has lost only the motion of a joint, instead of a limb or his life, or as frequently must happen, the one first and the other afterwards."

In No. X of Guy's Hospital Reports there is a case recorded, which is alluded to by Mr. Alcock, so very similar to the condition our patient would have been in provided that the advice to remove the patella had been followed, that I cannot forbear to quote it. It will answer remarkably well as a closing argument for the side we are advocating. "The patient was under the care of Mr. Ward of Huntington. The knee joint was laid open by the contents of a fowling piece, and a great part of the patella shot away. A poultice was applied, and *no unfavorable symptoms* either local or constitutional occurred during the progress of the case. The remaining small portion of the patella was subsequently removed. In three months the wound was healed.

"Eventually, considerable motion of the joint was gained. The cicatrix by its firmness or cartilaginous structure seems to have supplied the place of patella, and the patient walked well without crutches."

I would *now* not merely repeat the question, whether anchylosis and restoration to health might not have been effected in our patient by the removal of the patella, but I am tempted to ask if there would not have been, as in the case just copied, good hopes of a flexible and useful joint?

Since the above was written we are happy to find that the

treatment of suppurative joints by free incisions has been sanctioned by Mr. Brodie in the *last* edition of his book on the Joints, and by Mr. Skey in his late work on Operative Surgery. Mr. Gay has also done much to bring this treatment into favorable notice. Their united testimony, if not conclusive, is of very great weight.

My next and last case was one of suppuration in the joint, without any external opening. During the year 1850, I was invited to see a case in the hands of another practitioner, where the patient had at some time previously met with a fracture of the patella, and where considerable space had existed between the separated fragments. Recently he had wrenched the knee again, and great swelling had followed, which had extended five to six inches above the usual seat of the patella. Some but not excessive constitutional excitement arose, and the integuments were tense, red, and shining. The surgeon in attendance had opened it, and serum, with pus, and some flocculent masses were discharged. Most all who saw the case believed the joint to have been opened, but there was evidently an opinion entertained by some that the swelling existed in the loose cellular tissue under the rectus tendon, and not in the joint itself. The patient, however, did very well, and gradually recovered as good use of the joint as he had possessed before the injury.

I felt confident in this case that the knee joint had been opened, and for the following reasons. The man had met with a fractured patella, and undoubtedly at this time the synovial membrane was lacerated, as must invariably be the case when the patella is broken. Subsequently he sprained his knee, and at the time probably tore the capsule again from the attachments it had formed with the broken ends of the patella. Inflammation followed and the whole joint became distended.

One source of error then is the difficulty in distinguishing between effusion *in* and effusion *about* a joint. Effusion into a joint, especially if there is no other disease, is ascertained by the fluctuation felt on depressing the patella as in hydrops articuli. But if there is other disease this sensation may not be felt. In the above case fluctuation could not be detected under the broken fragments of the patella, yet the swelling on

the sides of the patella was sufficient to lead us to believe that the effusion was in the joint. M. Lisfranc has indeed stated that effusion into and about the joint may exist together; but they must be very rare, and only I believe in complication with scrofulous disease. If we would only examine the synovial membrane upon the dead body, we shall find that it extends naturally from two and a half to three inches above the upper surface of the patella, and that on pressure it is very distensible, so as easily to be made to mount much higher, as it must do whenever the capsule is full of fluid.

With regard to the treatment resorted to, we must confess, that knowing as we now know, that the joint contained pus, we highly approve of it. It is admitted by Dr. Burns, that in synovitis, "if the secretion is more rapid than usual, the skin becomes smooth and shining from distention, then red, and after a lapse of more or less time the articular abscess bursts." Mr. Brodie mentions an instance where this happened—a case also lately occurred at the Bellevue Hospital. Now the above case was exactly in this condition—red, shining, and distended; and the surgeon only anticipated the action of nature in making an opening. He even acted wisely in doing so, for if left to burst of itself it might have discharged externally, and if so, fortunately for the patient; or it might have burst into the loose cellular membrane under the rectus tendon, and then all the dangers which it has been one of the chief objects of this paper to indicate might have ensued.

But we may hesitate to open a joint unless we are satisfied that it contains pus. Its presence may be suspected from the distention, shining, and redness, and this suspicion will be confirmed if there are chills and a frequent pulse. Still we may doubt, and wish, as we ought, to act with extreme prudence; then we must make use of the test recommended by Mr. Brodie, in the last edition of his book published in 1850, and make a puncture with a grooved needle before making the incision.

We have now ascertained that acute synovial inflammation with purulent effusion is not limited to those cases where the capsule is punctured or lacerated with the integuments; but that it may arise in *scrofulous knees*, where inflammation

and ulceration have been transmitted from the indurated tissues to the synovial capsule; that it may be *consecutive upon ulceration of the cartilages*, whether inflammation or caries exists or not in the heads of the bones; that it *may be caused by a carious patella, or by sprains of the joint.*

The peculiar dangers to life and limb need not again be repeated, they can be seen from what I have already said. I would, however, in closing, offer the following practical considerations:—

An abscess in a joint should be treated like an abscess in any other part of the body. If there is any doubt of the diagnosis being correct, we should make a puncture with a grooved needle before making an incision.

If a carious patella exists, we should watch our patient with much anxiety, fearing that inflammation and suppuration of the synovial membrane may come on at any moment. If the caries is superficial, we may wait awhile, for possibly this diseased action may cease and the wound heal. If, however, it seems to involve the whole thickness of the patella, we should remove the patella, although by doing so we should open the knee joint. At any rate, if we should hesitate to do this before ulceration of the synovial capsule has taken place, there can be no reason for delay after this event has happened.

Remembering always that a small opening is extremely dangerous, we need not fear to remove the patella, and by a proper position allow the matter to drain away as fast as it forms.

In such cases we must expect only an anchylosed limb; but this is better than amputation or death.

When, in the course of scrofulous disease, the synovial capsule becomes ulcerated opposite to the joint, so as to discharge externally, we ought to enlarge this opening in order to allow the matter to flow freely away. We shall thus prevent it from distending the capsule so as to cause perforation at some other part, which would be followed by suppuration of the cellular membrane under the tendons, and extensive burrowing of matter between the muscles, to the great danger to the life of the patient.

When the synovial membrane has once opened externally,

and where, from the smallness of the opening or other cause, a new opening has formed, and the matter in the joint been effused under the rectus tendon, we might be perplexed in deciding how to act. Amputation would, undoubtedly, deserve due consideration; but perhaps the patient's condition would preclude its performance. In this case we would wait and endeavor to remedy the evils as much as possible, by changing the position of the limb, so that the foot should be more dependent than the body, and bandage from the foot towards the patella so as to prevent œdema and the descent of the matter down the leg; also bandage the thigh from above downwards, and since the matter is accumulated under the rectus tendon, and is apt to be conducted along it up the thigh, we would make an incision on each side of the tendon, and perhaps pass a seton to intersect and drain off the matter.

If the synovial abscess should have effused its contents under the rectus tendon only, and not have broken outwardly, a large abscess would form in the thigh, attended, probably, with great constitutional suffering. If we should make an opening, the admission of air might make matters worse. In such a case amputation should be thought of, or if this should seem premature or unsuited to the enfeebled state of the patient's health, we would make as free openings as possible, and by managing with bandages, &c. as just suggested, and by supporting the patient's strength, be ready to amputate if we should find it necessary or proper.

ART. III.—*Medical Notes and Observations.* By an EX-HOUSE-SURGEON. No. I.

MR. EDITOR: The following notes of cases, and of the reflections and inferences suggested by them, were penned during a service as Resident Surgeon in the New-York Hospital. They are now presented for publication, in a somewhat desultory manner, it is true, but still valuable, individually, it is hoped, as facts recorded at the bedside, and inferences deduced from these facts while still under observation—unwarped by preconceived notions or pet theories. Therefore, where they may appear to conflict with writers of authority, I shall not consider

any apology due, or any explanation necessary. In medicine, it is not uncommon to find the facts elicited at the bedside entirely at variance with the teachings and writings of our great authorities, who, too often, instead of recording their own well-digested observations, introduce the written opinions of previous authors in a new shape, and thus transmit errors from book to book, and from generation to generation. Not only is this the case in works on pathology and treatment, but in what purports to be the record of stern anatomical facts; the statement, in particular cases, being, very evidently, not derived from personal dissection and examination of the parts described, but from the dictum of a preceding author; a labor-saving plan certainly, but one not calculated to give us an exalted idea of the industry and research of medical authors. A striking example of this may be found in the anatomy of the *vertebral column* as it is found described in all the works on anatomy. Speaking of the causes of the various curvatures of this column, anatomists tell us that the convexity of the *cervical* portion is owing to the fact that the vertical diameter of the bodies of the *cervical* vertebræ is greater anteriorly than posteriorly. This is an easy and very natural explanation, but it is *not* a fact that the anterior is greater than the posterior diameter in this division of the spine, at least, so far as our dissections have progressed, the reverse being the case. The cause of the convexity lies not in the peculiarity of the bones, but of the *intervertebral substance*, this being thicker before than behind. We might mention many other similar instances, but none quite so glaring. If you should regard the following pages, Mr. Editor, of sufficient importance to merit a place in your journal, they are at your service.

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It has fallen to my lot to see a great deal of *syphilis*, in all its various forms—primary, secondary, tertiary, and hereditary; and to witness the fact that, although a wonderful improvement has been made in its treatment since the days of Hunter and Swediaur, to go no farther back, there still remains great room for improvement.

Paris may be looked upon as the head-quarters of this disease, but no place affords a better field for its study than New-York, if its proper haunts are diligently sought out. It is stated in a scientific work on "Prostitution," published in Edinburgh by a physician attached to one of its hospitals, who institutes a comparison between his own city and London, Paris, and New-York, that it is more prevalent in the latter city than in Paris, and in Paris more than in London or Edinburgh. His conclusion is based upon a most diligent research into the condition of his own city in this respect, and upon the most reliable information which he was able to acquire from others as to the condition of foreign cities. His statistics of New-York are derived mainly from a minister of religion here; but however extensive his opportunities for practical information in this particular may have been, and however much his character for veracity and judgment is to be depended on, (and I know nothing against it,) I should doubt the correctness of his assertion. That prostitution is as rife in New-York, however, *in comparison with population*, as any where, I fully believe, and statistics proving the truth of this could easily be collected. Where prostitution is rife, disease must be rife, and it must be more so here, in proportion, than in Paris; for there, by a wise regulation of police, a medical surveillance is held over the sanatory condition of professional prostitutes, which it would be wise for every large city to copy,—thus curtailing by law the direful consequences of an evil which *cannot* be abolished by law. Of *all* the sources of improvement in the study of the *venereal* disease in this country, the New-York Hospital offers the most fertile by far. There, a large portion of one of the surgical departments is devoted almost exclusively to this disease, and its kindred affection, gonorrhœa; while cases of interest are always to be found in the other surgical departments, and in other wards of this. Among the class of patients admitted to the Marine Building which includes the venereal wards—sailors and boatmen, as might be inferred—the worst forms of the disease are met with. They are constantly exposed to contagion, while they are constitut onally and habitually careless, and it is not uncommon for them to regard a sloughing chancre as large as

a shilling piece as of small importance. This carelessness, together with the fact that they frequently apply to the venereal quacks, who infest a certain quarter of the city like locusts and vultures, previous to entering the hospital, causes these unfortunate victims to present, in their persons, the most horrible forms of this loathsome disease, and a constant certificate of the ill effects of the *abuse* of mercury, which is the panacea of these venereal empirics, or "pox doctors" as they are familiarly termed, in all the various forms and stages of *syphilis.*

Every one who has examined the history of the venereal disease from its origin, whatever that origin may have been, to the present time, or who has even watched its progress for only a few years,—who has noted the terrible ravages which it once made on human health and life, exceeding in loathsomeness and fatality even the Plague itself, must be conscious of the fact that it has progressively abated in virulence; that some of the forms of *sloughing* and *phagedenic chancre,* which were formerly so common, are now rarely seen; and that, from some cause or association of causes, the disease is gradually assuming a far milder type, and perhaps wearing itself out. This happy event is, no doubt, due to more causes than one: to greater cleanliness of the populations generally, for one; to the advance of civilization, which, however, may include the one last mentioned; but, more than all combined, we think, to *improvement in its medical treatment,* and, the principal improvement, *restriction and discrimination in the employment of mercury*—its total abandonment by many practitioners of eminence and experience, and its partial abandonment by most others in the treatment of the primary forms of the disease, both curative and prophylactic. We shall offer some considerations and facts bearing strongly upon this point as we proceed.

Mr. Christophers, in the January, 1852, number of the London Lancet, observes:

"The *first* step that tended to infringe on the ancient mode of treating syphilis—a disease then thought to be amenable to mercury, and to mercury only—was certainly due to the solution of the question of the non-identity of the two poisons of syphilis and gonorrhœa, and to the treatment resulting.

"The *second*,—to army surgeons, to Broussais, and to the introduction of what is called simple treatment, thereby proving the possibility of *curing every genital sore without the use of mercury.*

"The *third* step,—to M. Ricord, aided by inoculation, showing that chancre, in its first stage, is strictly *a local disease.*

"The *fourth* step,—to the introduction of iodine and its preparations in the treatment of *secondary and tertiary* symptoms.

"The *fifth* step,—to the recognition of primary phagedenic, as distinguished from the common or benign form of chancre, and the treatment resulting (Carmichael).

"The *sixth* step,—to the treatment of the local sore, and to the means adopted for the *early healing* of the same; for the longer the primary sore remains unhealed, the more severe the supervening secondary affection becomes.

"The *seventh* step,—to determining the non-contagiousness of the secondary and tertiary symptoms, and to distinguishing therefrom *warts*, certain kinds of *condylomata*, &c., that *are* communicable.

"The *eighth* step,—to the determination of some of the laws that appear to preside over *hereditary* syphilis: among the rest, the showing that to administer mercury to parents laboring under secondary symptoms does not prevent contamination accruing to their offspring; the determining, moreover, the futility of administering it to patients laboring under what is termed tertiary symptoms, with the same view, inasmuch as tertiary symptoms are *incapable* of being transmitted by hereditary disposition, this being considered by M. Ricord their characteristic mark."

To the first four steps of Mr. Christophers, is, no doubt, due most of the beneficial change which has been made in the management and results of syphilis.

Of Phymosis, with concealed Chancres.—When an abundant syphylitic discharge is seen issuing from the preputial orifice, and the prepuce itself in a state of phymosis, it becomes a question whether this portion of the integument of the penis shall be divided so as to admit applications directly to the

chancre, or whether detergent and medicinal injections shall be depended upon. From what we have seen, we prefer, as a general rule, the former. Many surgeons object to this on the ground that the cut edges of the prepuce are apt to become inoculated with the chancrous matter, and thus new, and perhaps more extensive, chancres be produced. Theoretically, this objection appears well grounded, but, in practice, I have not found it so. I have frequently divided the prepuce when there were chancres on its inner surface, or on the glans, discharging an abundance of matter, and I have seen others perform the same operation repeatedly, under the same circumstances; and I do not remember to have seen but one case where inoculation of the cut edges took place. It has commonly healed with remarkable rapidity. In several instances, where the chancres have been attended with excessive inflammation of the penis, and the glans or the prepuce in a gangrenous state, or approaching it, I have seen the cut edges of the prepuce *slough*, and a large portion of it lost by the sloughing process; but this did not result from the wound "taking on a chancrous character;" but from the inflamed condition of the parts, and in all these cases, it has been obvious that the incision has been of great service, not only in exposing the sore, but by relieving tension, and depleting the parts, thus preventing a more extensive destruction of tissue. In similar cases, where the opposite plan has been preferred, and the prepuce has not been divided, it has generally sloughed extensively, and it has not unfrequently happened that the sloughing has not been satisfied with destroying the prepuce, but has invaded other portions of the penis, committing the most extensive devastation of tissue, and, in a few cases, invading the abdomen, and either producing a horrible death, or rendering the patient a miserable specimen of mutilated humanity. We do not mean to say that these deplorable results occurred *in consequence* of the non-performance of the operation, for we know full well that cases occasionally occur where the combined and best directed skill of several surgeons has failed to arrest the sloughing process; but we have very seldom failed to effect this in cases where an early division of the prepuce has been a part of the treatment. For if the sloughing of a chancrous sore once gets under full

headway, and the constitutional effects of it once become seated, we have one of the most difficult and dangerous of all the forms and phases of this protean disease to contend with.

When the prepuce has been freely divided, especially when the division has been made upon the dorsum, there sometimes remains, at the end of the treatment, a rather unsightly bag at the end of the penis, which does not conceal the upper part of the glans. Some patients prefer to have this excised, for the sake of symmetry, or, as they suppose, to prevent difficulty in coition. But, generally, if left to time, it seems to have shrunk away, so as not to have been noticeable as a deformity, or to present any impediment to intercourse.

Of Buboes.—It is the common practice of surgeons to endeavor to "discuss" syphilitic buboes, that is, to promote their absorption before they have gone on to suppuration; and Wallace says, that even after they have proceeded to suppuration, their absorption and entire disappearance may be frequently effected. It is the equally common *opinion* of the patients themselves that these buboes should not be discussed or *driven in*, as they, not incorrectly, express it, from an idea that the system will thus be exposed to greater danger of a secondary visitation of the disease. And they often form a not very flattering opinion of our treatment, when we have, much to our own satisfaction, been so fortunate as to effect the absorption of a large bubo. This extra-professional idea is generally treated as ridiculous, and the "driving in" of the bubo is always regarded as "a consummation devoutly to be wished for." But, upon reflection, and inference from what occurs in other diseases attended with these glandular enlargements, the idea appears to be far from absurd. What is a bubo? A bubo is simply a swollen and inflamed lymphatic gland, and occurs from a variety of causes. A syphilitic bubo, which is called "a bubo" *par excellence*, is a gland inflamed by the introduction of the specific virus of syphilis. Now, to understand the nature and therapeutic indications of syphilitic bubo, it is necessary to inquire first as to the office of the lymphatic glands. They appear to act as sentinels to the system, to prevent its contamination by poisonous or noxious matter applied to the

surface. For such matter being taken up by the absorbent vessels, is carried to the lymphatic glands, and there its noxious properties are eliminated or expended, the glands becoming diseased, but the absorption proceeding no farther. Not that this is always the case, but it is so, unless the poison be extremely virulent, or in great excess. A number of observed facts seem to corroborate this supposition. Thus, in chancres upon the penis, when the glands in the groin become affected, forming buboes, it is found by observation, that the system is much more likely to escape secondary symptoms than in cases where these glands remain intact. (See Wallace and other writers on the venereal disease.) Again, when *post mortem* matter is by chance introduced under the cuticle during dissection, how often do we find the matter absorbed, carried along the lymphatics, which become inflamed, to the *glands* in the axilla, which also become inflamed; but how seldom do we find the absorption proceed any farther. And it is not always nor generally because its progress is arrested by treatment, that it proceeds no further; for it frequently goes on from the point of insertion with rapidity, and before any treatment is applied to the glands which become violently inflamed in a few hours. But here the inflammation ceases, or is *kept in check*, until remedies may have time to act in preventing the general contamination of the system.

In external *cancerous affections* also, if these affections, in their inception, be considered local, the lymphatic glands first become affected, and give the alarm that the system is in danger of contamination.

In that terrible scourge of former times, the plague, it was uniformly noticed that those patients, in whom the buboes made their appearance early, were most likely to recover, the disease seeming to expend its violence upon the glands. "Buboes," says Dr. Good, speaking of the plague, "in the opinion of all the practical writers, or nearly without an exception, are a critical mark of the disease, and the *natural means of conducting it to a favorable termination.*" "In many instances," says a celebrated writer on the subject, "they neither inflame nor become painful; in others they suddenly disappear after having reached the size of walnuts. In the former cases, they

afford *no relief;* in the latter, *death is almost sure to follow speedily.*" And again, "Upon a free suppuration, they certainly render the patient less susceptible of the disease afterward." In the opinion of M. Sotira, and indeed of most of the French medical staff appointed to the Egyptian expedition, they prove *an indemnity for life.*"

Now, reasoning from analogy, it would really seem that the syphilitic bubo is a safety-valve for preventing the reappearance of the disease, and instead of being regarded as an unwelcome complication, ought to be looked upon as a favorable event in the progress of the disease, and its suppuration promoted, instead of retarded or prevented. At all events, by so doing, the duration of the patient's confinement will be cut short one, two, or three weeks, for we frequently lose so much time in fighting with a bubo by leeches, blisters, compression, &c., when it finally, and in spite of us, proceeds to suppuration. And perhaps we have all this time been contending against a salutary effort of nature to eradicate a loathsome disease from the system. In cases, where the patient has earnestly desired the speedy cure of a bubo, or where circumstances have rendered it desirable, the following means have been found very efficient. Repeated blisters, dressed with the ungt. hydrarg. and the application of a compress and spica, or of caustic potash, to produce a slough. These means are particularly applicable to long standing, and indurated buboes, which give but little inconvenience to the patient except from the fear that they may lead to something dangerous. The same means will, however, succeed equally well with inflamed buboes, if the inflammation have not gone on to suppuration.

We sometimes see buboes in the groin, in the situation of the inguinal glands, where there is no sign of chancre on the penis, or any where else, of there ever having been one, and when the patient solemnly asseverates that none have ever existed, and without any discharge from the urethra, or tenderness along its course. These buboes follow the same course as ordinary syphilitic buboes. A case of this kind, I call to mind in the person of an Irish emigrant, who was admitted to the hospital, sick of ship fever, immediately on his arrival; two weeks after his admission, and when he was convalescing

from his illness, but unable to leave his bed, a bubo appeared in the groin in the usual situation of a syphilitic bubo, and followed the same tedious course—no chancre, no cicatrix, and no urethral discharge; and the patient stated that he had never enjoyed connection with a female.

The use of mercury in the primary stage of syphilis.—In chancre unconnected with any induration, and indurated chancres are not now of very common occurrence, the treatment will almost always be as speedy and successful without the internal administration of mercury, as with it. Cauterization, and the subsequent application of a stimulating lotion, as Labarraque's solution diluted, will generally suffice; or, if it does not, the *local* application of mercury, in the form of black or yellow wash, or, in some cases the ungt. hyd., or hydrarg. proto-iodide will effect a cure. Sometimes repeated cauterization with argent. nitrat. or acid. nit., or better still the acid nitrate of mercury, is necessary. This latter caustic appears to have a specific action on the chancre, as it also has on syphilitic warts; the blighting effect on the whole mass, causing it gradually to shrink away, being far more efficient, than the successive destruction of superficial layers by its caustic action. If inflammation be present, an antiphlogistic treatment constitutionally and locally must, of course, be premised. If the chancre be not more than a few days old, the above treatment will probably always be successful, and speedily so; but, if it have existed for weeks or months, and especially if it be attended with a hard base, mercury, in the form of blue pill will generally be necessary; though it is not always necessary to touch the gums; and it seems to act more mildly and with equal efficiency on the system when combined with small portions of tartarized antimony and opium. I have frequently used a pill composed of hydrarg. pil. grs. iij., opii. gr. $\frac{1}{4}$, ant. tart. gr. $\frac{1}{8}$, bis aut ter die. And, in case of much induration about the chancre, and where an indurated, and not inflamed bubo attends the chancre, time will be gained by commencing the mercurial treatment early by means of this pill or a similar combination. When there is any obvious indication for mercury, then it is proper to give it, and induration will not generally be entirely removed with-

out it. When the induration has nearly disappeared, or when it becomes evident that mercury will not remove it, as is sometimes the case, then it is time to stop.

The use of mercury in the secondary stage of syphilis.—In many of the forms of secondary syphilis, mercury acts as a specific, and cannot advantageously be replaced by any other medicine. In the secondary eruptions of all kinds, the diseases of the testicle, the ulcers of the fauces, and indeed in all the *secondary* diseases properly so called, mercury is the remedy which appears to act most speedily, and certainly on the system. Take, for instance, one of the worst, perhaps the worst forms of secondary disease, rupia; take a man covered with these foul ulcers, broken down by cutaneous irritation and quack medicaments, and even in such a case, a cautious use of hydrarg., bichlor., combined with tinct. cinch., perhaps opium, will have an excellent effect. The peculiar preparation of mercury employed in this stage is of great importance. Calomel and blue pill weaken the system, and have but little effect on the disease; while the remedy first mentioned, or the iodide or biniodide of mercury, have almost uniformly a salutary effect. Calomel is however necessary in one form of secondary syphilis, iritis; in which it is necessary to induce the mercurial action on the system more rapidly than can be done by any of the above remedies.

Of mercury as a prophylactic, or preventive of Secondary Syphilis.—One of the worst features of the venereal disease is its liability to return after its cure, or disappearance from the surface of the body. To eradicate the poison from the system, so as to destroy this liability, has therefore always been the most important point in the management of the primary disease. To effect this desirable result, mercury has, until of late, been almost universally regarded as by far the most powerful, if not the only means. But the progress of medical science, the gradual decline of ancient prejudices, and the recent researches of eminent and practical surgeons in various parts of the world, have tended to shake our confidence very materially in the efficacy of this agent. So we shall not be deemed silly, perhaps, if we commence our remarks on this portion of the subject, by asking—What effect has mercury in preventing

secondary syphilis? It is a question more easily asked than answered. Has it any such effect? Even this, after a careful examination of the question, both in the writings of the authorities, and in the wards of the hospital, we are not prepared to answer definitely. It is always difficult to obtain reliable statistics on the subject. We are generally obliged to depend on the statements of the patients themselves, and persons suffering from this disease are often such as cannot be depended upon for veracity. They sometimes deny that they have ever had the primary disease, when the secondary symptoms are upon them in an unmistakable form, or when the characteristic cicatrices of chancres and buboes are distinctly visible. Still, from what personal experience we have had, and from the recorded experience of others, especially that of the English army surgeons at home and abroad, whose statistics are certainly most reliable on this point, we have been able to arrive at the conclusion, that mercury, when given with no definite object, but the prevention of secondary symptoms, and continued for weeks, does more harm than good, often producing or aggravating the disease, even when administered *secundum artem*, and with a due regard to *time*, *stage of the disease*, and *constitution* of the patient. And we are certainly unable to say positively that we have ever seen one case rendered proof against secondary symptoms by taking mercury; while we can give several, in which secondary symptoms were originated by mercury, and a number in which this agent materially aggravated the disease.* In this we are not alone, such cases being referred to by Sir Benj. Brodie, Liston, Guthrie, and many other eminent men, all advocates of the prophylactic use of mercury. Indeed, we have been struck, on examining the works of the great writers and lecturers on syphilis, with the fact, that the strongest evidence of the inutility and injuriousness of mercury, when used as a preventive, is to be drawn

* Mr. Lawrence, who is an advocate of the prophylactic use of mercury, admits that it is by no means certain, that a prolonged course has the effect of preventing contamination of the system, and states that he finds little to assist him on this point in consulting the best writers.—CHELIUS, *Surgery*, vol. 2, p. 87.

from the recorded experience of those who practised and advocated its employment. Witness Wallace, one of the best and most systematic writers on syphilis (excepting one heresy), and who is a strong advocate of the prophylactic treatment. After advising mercury in all cases where the circumstances of the patient will admit, with a view to prevent secondary symptoms, he says, speaking of patients among the lower classes, who are exposed, during the treatment, to the inclemency of the weather,—"In cases of this kind, I generally confine my treatment to them (topical applications), in conjunction with the internal use of nitrous acid, and, by these means, I succeed, for the most part, *in healing the disease with rapidity.* Cases treated in this way are also *very seldom* followed by *secondary symptoms.*" "Whether this be owing to the topical application of mercury and caustic, or to the internal employment of the acid, I cannot, as yet, pretend to say decidedly, but probably both contribute." p. 113. Here he admits that, even in his worst class of patients, the treatment without the internal use of mercury is followed generally by rapid cures, and that secondary symptoms seldom follow. What more can be said in favor of the mercurial treatment? and yet he advises mercury to be given when circumstances admit it. Ricord, the best modern authority in venereal diseases, says,—"I have never seen a chancre destroyed during the first week of its existence, afterward give rise to secondary symptoms." We have then a large class of cases, wherein it is obviously improper to administer mercury. Again, he says,—"It is only the *indurated chancre* which is capable of giving rise to secondary syphilis." This excludes another still larger class of cases. For, in these days, it is rather more common to have chancre without than with induration; and the chancre, which is technically called *indurated*, or the Hunterian chancre, is comparatively rarely seen. If to these we add the cases in which the chancre is phagedenic, or rapid in its progress from the commencement, and the cases of sloughing chancre, in all of which it is almost universally admitted that secondary symptoms rarely follow, we have the evidence of no less a personage than Ricord against the prophylactic use of mercury in, at least, a majority of cases of primary syphilis; and con-

structive evidence almost as strong may be drawn from the writings of Sir Benjamin Brodie, Mr. Guthrie, Mr. Liston, all authorities of the first rank, and all advocates of mercury. While the testimony of those opposed to the use of mercury is, of course, still stronger. To mention only a few instances, for we have not the time, and would not presume to ask the space to sum up all the evidence which is at our disposal. Mr. Rose, an English army surgeon, treated all the syphilitic patients which came under his charge for two years, (and the number was very large), without mercury. Sir B. Brodie says,—"I saw these cases, and every now and then, watched their progress with him (Mr. Rose). Every sore upon the organs of generation was cured under his management, without the aid of this agent" (mercury). And he further states that—"the hardness, which was left behind, disappeared without resort to mercury." "Many of the patients," he goes on to say, "*never had secondary symptoms.* Which may, however, be attributed to the sore not having been venereal. In some cases, where secondary symptoms appeared, they were slight, in others severe, exhibiting their usual character. Whatever they were, they *yielded without mercury.* Other army surgeons repeated these experiments, and arrived at the same results." "With respect, however, to recovery from syphilis," Sir Benjamin continues, "without the aid of mercury, I do not believe you can apply a rule drawn from the observation of what occurs in soldiers to society at large." Nevertheless, the valuable testimony of Sir B. Brodie in this case proves this much, that secondary symptoms did not come on more frequently in these cases than among those treated by mercury. Mr. Newbigging, physician to a venereal hospital in Edinburgh, treated upwards of six hundred cases without mercury, and he draws the following conclusions from his trial: "1st. That the venereal disease is curable without the employment of mercury. 2d, That the duration of treatment is shorter than when mercury is employed. And, 3d, That the *cases of secondary symptoms* supervening after the simple method, are *less frequent* and *not so serious* in their nature as under the mercurial system." But this gentleman is still an advocate for the use of mercury in primary and secondary syphilis, when there is a definite object to be gained by it.

We have said that mercury originates the symptoms usually attributed to secondary syphilis, and aggravates them when they are present: and we now present some examples, not only from our own experience, but from that of the celebrated authorities before alluded to. Sir Benjamin Brodie says, in criticising Mr. Rose's treatment, "I know that, in patients treated by mercury, there is a greater chance of disease of the bones than there was in Mr. Rose's patients, to whom it was not exhibited; and I know that when given for liver complaints, and for diseased testicles, it may *produce* nodes." Mr. Liston says: "Long continuance of a mercurial course predisposes to periostitis; and exposure to cold, while a patient is undergoing that medicine, is a frequent cause of periostitis." In January, 1851, there were two cases of nodes under my charge in ward 3 of the marine building of the New-York Hospital: one, a very respectable middle-aged Scotchman, named McKennon, had large nodes on his skull. He strongly asserted his innocence of any venereal taint, and there were no vestiges of it to be found on his body. He stated that he had suffered an attack of fever on the Mississippi River, and that he had been dosed with immense quantities of calomel—teaspoonful doses. The other patient was a boatman on the Hudson, and an old acquaintance in the hospital, being a notorious votary of Venus. He had been twice treated for the primary disease in the hospital, and both times by mercury carried to the usual extent, with a view to prevent secondary attacks. He had large nodes on his tibia, and one on the left ulna. Both these cases were treated in the same manner: that is, by the internal administration of the iodide of potassium, and the local application of the tinct. of iodine, and both perfectly recovered. These are instructive cases: one showing that mercury is capable of giving rise to symptoms not to be distinguished from those ascribed to secondary syphilis; the other, that the same symptoms may occur after primary syphilis has been treated by mercury with a view to prevent them. In the latter case, it is impossible to say whether the affection is syphilitic or mercurial.

Here is another case in point. Patrick O'Brien, a healthy-looking Irishman, aged 35, under treatment in ward 15, main

building, for syphilitic ulceration of the throat of a severe character, was thoroughly mercurialized by minute doses of hydrarg. bichlor. and by mercurial fumigations. After he had been in this condition for some days, was attacked with a furious secondary iritis, which yielded completely, though slowly, to the iodide of potassium, which medicine appears to have the power of counteracting the evil effects of mercury. We not unfrequently have patients return to the hospital months after an attack of primary syphilis, for which they were thoroughly mercurialized, with secondary symptoms, though they deny any fresh infection. On the other hand, cases that have never taken mercury in the primary disease, have entirely escaped the secondary, at least for two or three years, or as long as the observation of the physician has extended.

A surgeon in the U. S. navy informs me, that he never uses mercury on board ship in any form of primary syphilis, and he rarely sees secondary symptoms ensue during the voyage, which sometimes extends to three years.

We have the evidence also of Sir Charles Bell that mercury will give rise to worse symptoms and more intractable diseases than that which it is intended to prevent. He says (*Institutes of Surgery*), "I have often repeated to you, after Mr. Hunter, that mercury will produce scrofula. What then more likely to occur than that, after the specific action of syphilis is subdued through the influence of mercury, a *scrofulous dathesis* should supervene, and that you should have a scrofulous gland rather than a bubo to treat 'in the long-run.'" Yet, in the next paragraph but one, he adds: "Do not be satisfied, when there is a deep ulcer in the palate, with less than a course of mercury properly conducted for six or eight weeks." Again he says: "By long confinement and a course of mercury, your patient is like a hot-house plant, which a breeze may nip." Yet, he asks—"Is there any experienced senior in the profession, who, having a son of eighteen or twenty, and that son having a chancre, that would treat him without mercury? No! there is not such an unnatural person." But we will not, at present, pursue the inconsistencies of the advocates of mercury any further, nor accumulate the testimony which they

inadvertently present against the agent which they so strongly recommend.

Admitting that mercury *does* act as a prophylactic, we would ask, *how* does it so act? No one can tell; no one can form a respectable idea; but we go on giving it in case after case, from habit, and because it is traditionally handed down to us by our forefathers in medicine, that it *will* prevent secondary syphilis. Some have *supposed* that it acted chemically, and neutralized any syphilitic matter present in the system, by the formation of a third and inert substance. "It has been further supposed that it is by the disengagement of oxygen, which the various preparations of mercury introduce into the system, that the effect is accomplished." Mr. Hunter supposed that it acted as a preventive "by exciting a new and peculiar action in the system, whereby the syphilitic action is destroyed;" that is to say, homœopathically, *Similia similibus curantur.*

We object to the employment of mercury with a view to prevent the occurrence of secondary symptoms on six grounds.

First. It is not proved that it *ever* does act as a preventive. Nor can any of its warmest and wisest advocates explain *how* or *why* it does so act.

Secondly. It *is* proved, and admitted by almost all writers on mercury, and on syphilis, that this agent not only often precipitates and aggravates secondary symptoms, but actually originates them, or produces them when the primary disease would not have done so.

Thirdly. It is well known that there are constitutions which will not bear the administration of mercury in any stage of the disease; but in which, this agent, instead of acting as a remedy, is converted into a poison, and it is impossible for the most astute physician to ascertain that such an idiosyncrasy exists until the evil has been consummated.

Fourthly. It is shown by the researches of medical writers on this subject, that only a proportion of those affected with primary syphilis are ever troubled with secondary symptoms (one in ten, according to Guthrie). Therefore we may be introducing a dangerous and often uncontrollable agent into the system, to ward off an evil which may, with strong probability, never appear.

Fifthly. We think that it is shown, by a careful examination of different writers on syphilis, even those who employ mercury as a prophylactic, that at least *as many* recover without the occurrence of secondary symptoms, when mercury is not employed as when it is.

Sixthly. If we employ mercury as a preventive, we never can be sure that we have carried our mercurial treatment far enough, or that we have not carried it too far; for it is admitted on all sides, that there is no criterion. Different rules are given by each individual writer. It is, too, often as Sir Chas. Bell says, "A certain number of dozens of pills, a certain weight of mercurial ointment is used, and that is the whole rule of many practitioners." It is admitted by most writers, that *ptyalism* is not an indication that the system has been sufficiently impregnated with the mercurial influence, and equally so that no definite period of time can be laid down, in which the constitution may be supposed to be sufficiently affected, though some vague general rules to this effect are given by most of them.

We gain this much by not employing mercury as a prophylactic. We curtail the average duration of the treatment about one-half, for a chancre can often be healed, and an incipient bubo discussed in one or two weeks, and then we consider the patient cured. Whereas, under the prophylactic treatment, he must remain under medicine six weeks longer; and he must, after this, pay the utmost attention to his diet and exposure for about an equal length of time. In the one case, we have only to fear the after effects of the disease; in the other, we dread not only these, but the evils of a mercurial cachexia, which are worse, or of both combined.

We have, thus, Mr. Editor, expressed our convictions and doubts with regard to the mercurial treatment of syphilis, based upon a somewhat extensive experience in the disease, and upon a careful perusal of what has been written on the subject by others greater than ourself. We hope that some day these doubts may, through the labor and further experience of future writers, be removed, and these convictions dissipated, should they prove unsound.

"Little remains to add," if I may be permitted to use the

appropriate language of another, "save for me to express the hope that any attempt, however humble, tending to elucidate the laws which govern, and to point to the treatment best suited to a disease which may be infinitely reproduced by the sufferer, while it is perpetuated in his offspring—a disease which, though it spare, for the most part, organs essential to life, directs its violence against the more ornamental parts of the human frame, the skin, the eye, the hair, the throat, the organ of voice, being among the structures usually invaded, while the exposed portions, the face, the hand, the nose, from its favorable locality—a disease which fixes its stamp on a man like a plague-spot, pointing him out to his neighbor, and making him feel he has placed himself, for the time being, without the pale of society. An attempt, however humble, I repeat, to add to our means of preventing or treating a disease fraught with such dire calamity, may, it is hoped, be received with consideration for the intention's sake; and further, that the magnitude of the object may, in a measure, atone for the deficiency of the performance."

ART. IV.—*Membranous Croup successfully treated by Tracheotomy.* By DANIEL AYRES, M. D., one of the Surgeons to the Brooklyn City Hospital.

To the unprofessional observer *all* forms of croup are identical. The special attention of medical students, and the practical observation of most physicians is confined to two varieties.

1st. False or spasmodic croup is attended with little more disease of the larynx and air-passages than disordered functions. It is generally a secondary or symptomatic disease; short in its duration, and amenable to very simple treatment.

2d. True, or membranous croup, is an inflammatory disease, attended with fever. Commencing in the larynx, trachea, or bronchial tubes, it may extend to the lungs or even pleura, and is characterized by the effusion of tough plastic material into these passages, thereby preventing the ingress of air, and proper aeration of the blood. It requires active antiphlogistic and emetic treatment, but unfortunately is generally fatal.

A 3d variety called follicular stomatitis or diphtheritis, is a well-marked form of disease often confounded with the second variety; but whilst it differs therefrom in the locality of its origin, strongly resembles it in the mode of invasion, symptoms, duration, tendency to spread, in the plastic character of its effusions, and fatal issue. Indeed, so striking is this analogy, that excellent authorities have doubted the existence of any material difference in these two last forms of the disease; and this uncertainty may be greatly augmented when it has existed several days before medical aid is sought. It is when medication in all its forms has failed to arrest the disease, and human life is threatened, that surgery has been invoked to clear the avenues to the lungs: and then a correct appreciation of the condition, and parts involved, may be of immense moment to the victim. So that even in cases of doubt, the benefit of that doubt may not be withheld.

But here the operation of tracheotomy has now fallen into complete desuetude as a rule of practice, and this because as applied to the second variety, it too often presents few advantages, and least of all when undertaken in extremis. So unfavorably is this operation esteemed by the profession, that it is often difficult to obtain counsel to justify its performance, or the friends of patients to sanction this last chance for life. It is from these causes, together with the miscellaneous confounding of different phases of the disease, that we now rarely hear of the operation. Its success under such discouraging circumstances, becomes an important practical fact to the profession and the public: for after all the latter are alone called upon at the last terrible moment, to decide the case, and the prospect of success held out by the resources of our art may have great weight in that decision.

These observations are fully illustrated by a case which I saw in consultation at the request of Dr. Palmedo, a highly intelligent physician of this city, on the sixth day after the invasion of the disease. Dr. P., who had been associated in the case but the day previous, and watched it with intense and self-denying anxiety, has kindly furnished copious notes from which the following history is collated.

I. M. aged 4 years, of light complexion, rather delicate con-

stitution, but otherwise perfectly healthy, had suffered several attacks of croup since his second year. About the middle of March last he contracted a common catarrh, the result of undue exposure to wet and cold. On Friday March 19th, the cough which had been troublesome, began to assume a peculiar hoarse sound, and was soon followed by rapidly increasing dyspnœa. The real nature of the case was mistaken for a catarrhal affection of the tonsils, and afterwards for spasmodic cough, under which supposition pulv. mastic grs. viij. had been given in divided doses during Monday night. On Tuesday, March 23d, the symptoms becoming alarming, the parents of the child felt the necessity of calling additional medical aid, when the disease was recognized at the first sound, even before entering the sick room. The little patient being in imminent danger of suffocation, a sponge saturated in boiling water was instantly placed upon the region of the larynx, with a view to produce slight vesication. Subsequently six large leeches were applied to the neighborhood, and whilst still freely bleeding, a copious emesis was effected by the annexed powders.

℞. Sulphatis cupri, grs. xviij.
Sach. alba. ʒj. mix.

divided into six equal parts, one of which was administered every 10 or 15 minutes. To prolong this effect the following mixture was administered.

℞. Potass. tart. antimonii grs. iv.
Pulv. rad. ipecac . . ℈j.
Oxymel, scilla . . ʒij.
Aq. destil . . . ℥.

and a dessert spoonful repeated every ten minutes for half an hour. Large quantities of thick viscid slime, and several masses coagulated in the form of membranes and strings, were thus ejected. In about an hour and a half from the commencement of this treatment all the urgent symptoms began to subside. The face became quite pale, respiration slow, perfectly easy, and scarcely audible. The cough less frequent and loose, was followed by copious expectoration. Pulse 80,

soft and small, with a cool and moist skin. Sleep soon succeeded, the first that had been experienced for two nights. He was, however, directed to be aroused every hour for the alternate administration of the following mixture and powders.

℞. Ammon. muriatis.		℞. Hydrarg. sub. mur.	grs. vj.
Pulv. glycyr. aa.	3i.	Antim. sulpt. aurar.	grs. iv.
Vini antimonii,	3jss.	Pulv. g. acacia,	3ss.
Oxymel. scillæ,	3ij.		Mix.
Syr. simp.	℥j.	Div. in chart. No. vj.	
Aq. anisi,	℥iij.		
	Mix.		
Dose,	3iij.		

In addition, an aperient enema was given, and emp. vesicat. 2 × 2 inches, applied to the throat. Thus the night was passed quite comfortably, and strong hopes entertained for the child's recovery.

March 24th.—Towards morning, however, the respirations became a little more hurried and wheezing. Pulse, 100; cough dry and more frequent. The above-mentioned powders having been exhausted were repeated, and given every alternate hour with 3 ij. of the following mixture:

℞. Potass. tart. antim.		grs. ij.
Syr. senega.		
Syr. ipecac.	ää	℥ss.
Oxym. scillæ, ...		3ij.
Aq. anisi, ...		℥ij.
		Mix.

Towards noon, the respiration became more difficult and wheezing; a slight mucous ralê discovered in the lungs, and a louder ralê in the trachea; occasional harsh cough, and expectoration very scanty. Pulse, 110. Anticipating an extension of the disease to the lungs, three more leeches were applied over the sternum, and the following cathartic given:

℞. Sub. mur. hydrarg.	
Pulv. jalap, aa. grs. x.	
	Mix.

About 1 P. M., a copious and fœtid discharge took place

from the bowels, after which the pulse and respiration were somewhat relieved. An unfavorable prognosis was however entertained, anticipating another relapse. This actually supervened about 6 P. M. Each inspiration became more wheezing or whistling, and laborious to the extreme, with extraordinary contractions of the diaphragm, aided by all the voluntary muscles. Cough dry, rough, and barking, but less frequent and strong than yesterday. Occasionally a loud ralê was detected in the trachea, but no expectoration, and there was now perfect aphonia.

At 9 P. M., he was rapidly exhausting with paroxysms of intense excitement and agony;—the whole body thrown into convulsive action whilst struggling for breath, under a sense of impending suffocation. Between these attacks he lies listless, half unconscious, with eyes closed, face and lips livid, countenance pinched and sunken. Pulse 120 and weak, but still sufficiently distinct to be counted. Cool perspiration over the forehead; extremities yet warm. Thorax resonant on percussion and respiration; when it could be heard, puerile. All hopes from emetics, and in fact from any medical treatment, was abandoned: and in answer to the urgent entreaties of distracted parents and friends still to do something for the relief of the sufferer, Dr. Palmedo proposed tracheotomy as offering a slight, but yet the only hope of salvation. In this condition, I was requested to see the child; and, anticipating operative proceedings, desired my friend Dr. John Cochran to join the consultation. Death seemed inevitable; and the child being now almost past consciousness (at least of pain), the operation was urged purely as a matter of duty, and finally assented to, but without an expectation of success.

At 10 P. M., the child being placed on a table, with the neck well raised, and made tense by depressing the head, I commenced a longitudinal incision just below the cricoid cartilage, one and a half inches long. Carefully dividing the fasciæ upon a director, and separating the muscles, several large veins were brought into view, and pressed out of the way by curved spatulas. The thyroid isthmus interfering, was divided and compressed with very little hemorrhage. A free opening was then made into the trachea, into which air rushed

with great force. A medium tracheal tube was now introduced and secured with tapes, compression above and below the wound being effected by adhesive straps. By means of a long feather, some tough shreds of membrane with viscid mucus were removed. In a few moments, the natural respiratory movements of the chest became slowly perceptible, and in an hour the calmest and most regular breathing was established, color and life returned to the face, and the child was asleep. When awakened, he was perfectly conscious and comfortable; drank two tumblers full of water during the night, coughed frequently, and ejected large quantities of viscid secretion, which continually accumulated in the tube, and required removal with a feather.

March 25th.—Towards 4 o'clock in the morning, the respiration became more frequent and laborious, and the cough dry. On introducing the feather through the canula, a solid substance could be felt blocking up the trachea, but nothing could be thus extracted. The symptoms again seemed threatening suffocation; however, by insinuating the feather about 4 inches into the trachea and beside the obstructing body, such a violent fit of coughing was produced that a hard fibrinous mass, 1½ inches long, and of similar calibre to the tube, was thrown out and to a considerable distance, whereupon the child dropped away, quite exhausted, and fell asleep. Several smaller masses, with a vast quantity of thick, reddish and glutinous slime, were expectorated during the whole day: between the intervals of the cough, the child appeared quite easy, and took some beef-broth.

In the afternoon, between four and five o'clock, the symptoms again became aggravated; and suspecting obstruction of the canula, it was removed, cleansed, and replaced. But still the respiration continued frequent, difficult, and noisy, in consequence of accumulated exudation in the trachea which could not be dislodged. At length a piece of sponge secured to the end of a curved probe, and saturated with the following solution,

℞. Argenti Nitratis, ℈ij. cum Aq. Destil. ℥j.,

was introduced through the canula into the trachea about four inches in all. The momentary effects of this operation were ter-

rific. The child twisted and writhed seemingly in the greatest agony; leaped up in his bed, and made every possible effort to blow through the tube. It was the last struggle for life: a few moments' delay, and suffocation seemed inevitable: but by a final and still more vehement paroxysm of coughing, another mass of concreted, fibrinous matter, two inches long, was blown up high in the air, when the same happy change took place as in the morning, followed by sleep, and a comparatively easy night. Of the following mixture he was directed to have a teaspoonful every two hours:

℞. Liquor. potass. ʒij.
Acet. scillæ.
Syr. ipecac. aa. ℥j.
Mucil. g. acacia, ℥ij. mix.

A free secretion of mucus took place after the introduction of the solution, and to obviate its desiccating in the tube, thereby preventing the free transit of air, the internal surface was lubricated with oil of sweet almonds, and every five or ten minutes a few drops of warm water were introduced by means of a feather. The expectoration was evidently much facilitated by this simple imitation of the natural condition of the air passages. The tube was daily removed without trouble—the symptoms of the child continued to improve—and the secretions of the chest gradually verging towards a healthy condition.

March 28th and 29th.—It was unnecessary to remove the tube, which was readily cleansed by the swabbing, and on the following day a new tube with a large oval opening in its posterior wall, was substituted for the old one, through which some air was found to pass by the larynx.

April 6th.—On removing the tube, the child for the first time cried and spoke, but seemed frightened at its own voice.

April 9th.—The air passages being now tolerably free, the tube was removed, and its place closed by adhesive straps. The voice is a few notes higher than before.

April 11th.—The wound in the trachea is quite closed by granulations, and the child constantly prattling in its natural tone of voice. The cough is scarcely troublesome, the secre-

tions healthy, and rest undisturbed. With a good appetite, it is rapidly gaining lost flesh, and now walks and plays about the room.

We have been thus particular in recording the minutiæ of this case, to demonstrate, first, the urgent necessity for the operation; and second, the perplexities it may sometimes surmount. But to command for it confidence and popularity, requires the exercise of care in analyzing symptoms, comprehending the location of the obstruction, its true pathological cause, amount, extent, and the tendencies to death, before the operation is demanded. Neglect of these precautions by "wise ignorance," has often brought true conservative surgery into disrepute, and the proclaimed necessity of this operation in disorders simulating inflammatory obstruction in the puerperal and hysterical condition (cases by no means uncommon and apt to alarm the inexperienced), has still further brought disfavor upon it, and depressed the resources of science, in public estimation.

ART. V.—*Lemon Juice in Acute Rheumatism.* By T. D. LEE, M. D., of New-York.

CASE 1.—William Coleman, fifty-one years of age, has had frequent and severe attacks of acute rheumatism for the last fourteen years.

April 30th, 1852.—Patient has not been able to remove from his bed for the last four weeks; and he is unable to sleep by night on account of acute pain; his hands, knees, and feet are very much swollen; and he is constantly growing worse. Patient has heretofore had attacks which have lasted three or four months. At 8 o'clock, P. M., patient commenced taking lemon juice, fresh from lemons; a tablespoonful in twice the quantity of cold water with a little sugar, every hour.

May 1st, 9 o'clock, A. M.—Patient sitting up endeavoring to shave himself. Says he feels better in every respect, and has slept quietly for four hours, which he has not done before for four weeks. Has taken six ounces of the juice. Same regimen to be continued as before.

May 2d, 9 o'clock, A. M.—Patient has slept well during the night, and is sitting up eating his breakfast. Six ounces taken. Says "lemon juice goes right to the spot."

May 3d, A. M.—Free from pain, and only complains of soreness in his feet. Same quantity as before.

May 4th.—Still improving, having taken six ounces regularly.

May 5th.—Comfortable, and taking the same quantity of lemon.

May 6th.—Doing well, still taking the same quantity of lemon, having no disposition to leave it off.

May 7th.—Patient is able to walk about his room, and does not speak of any pain. Lemon continued.

May 8th.—Patient complains only of weakness in walking. Lemon juice discontinued, not having disagreed with the stomach or bowels in the slightest degree.

May 9th.—Patient sleeps well by night; has a good appetite, and is fast gaining strength.

May 10th.—Patient is only waiting for fair weather to go out.

CASE 2.—Mrs. P., seventeen years of age, has had frequent attacks of acute rheumatism for the last seven years. She is affected with enlargement of the heart. Patient is confined to her bed, and is unable to move or sleep on account of the severe pain she suffers; and wishes to have something prescribed to make her sleep. Patient was advised to try lemon juice for 24 hours, before using any other remedy; to this she assented. Remedy commenced at 10 A. M., as in Case 1st.

May 2d.—Patient has slept well, and has much less pain and soreness.

May 3d, 4th and 5th.—Improving. Continue lemon as before.

May 6th.—Free from all appearance of the disease. Lemon discontinued.

May 7th.—Patient walked out. Continues free from the disease. In this case, as in Case 1st, there appears to be a flexibility of the joints, unusual in recoveries after other modes of treatment.

In a third case similar to Case 1st, the lemon appeared to be equally beneficial. In two other cases, one sub-acute, the other chronic in type, the lemon juice had an equally good effect.

ART. VI.—*Upon the Diseases of the Isthmus of Panama.* By JOHN A. LIDELL, M. D., OF NEW-YORK.

[Continued from Vol. VIII. N. S., p. 381.]

V.—OF DYSENTERY.

DISORDERS of the bowels, both on account of their severity and the frequency of their occurrence, are the "scourges" of northern men on the Isthmus of Panama. Of them, dysentery is one of the worst forms. This disease became prevalent among the men under our charge, about the first of March, but previous to that time we had seen scattering cases. The dry season, which corresponds to our winter, was then well advanced, the soil was parched, and the streams of water were very low. The men had then been in the country for some time, a considerable number having arived early in December, and the balance about the eighth of January. They had, also, with scarcely an exception, suffered more or less severely from the fevers of the country, and consequently were more or less enfeebled.

We have already had occasion to notice the deleterious influence of the climate of the isthmus upon the abdominal viscera. We have had occasion to mention the chronic congestion of the portal vascular system, the chronic enlargement of the spleen and liver, the increased quantity and morbid quality of the biliary secretion, the impaired tone of the digestive function, and the irritable state of the gastro-intestinal mucous membrane, produced by the combined action of malaria, high atmospheric temperature, and excessive atmospheric humidity. These morbific agents seemed to be powerful *predisposing causes* of inflammatory action in the mucous membrane of the large intestines, in the manner just pointed out.

Among the *exciting* causes of dysentery, we may mention first, errors in diet, of which the most common one was taking food in too large a quantity. Some northern people, chiefly laboring men, continued to fill their stomachs with food to repletion, partly from habit, and partly from the mistaken notion that it was necessary to eat much, in order to preserve their strength or to recover it when

diminished by fever or other sickness, forgetting that the new thermometric relations by which they were surrounded, did not require the quantity of food which they had been accustomed to use in a colder climate, and forgetting that their enfeebled digestive organs could not assimilate the quantity even if it were necessary to preserve their physical vigor. In many cases, the natural result of this was, that more or less of the food so taken, instead of being assimilated, underwent the putrefactive process, became a local irritant, and was passed downwards through the intestines, becoming constantly more acrid till its final expulsion from the body. Indigestible kinds of food were detrimental in an analogous manner. The fruits of the country seemed to be productive of dysentery, only when indigestible kinds or excessive quantities of them were taken.

Another exciting cause of dysentery was the use of water of a bad quality. When this disease became rife among our people, we immediately instituted inquiries for the purpose of determining what had produced such a result, and, among other things, found that the cooks were using, as a matter of convenience, for culinary purposes, water highly charged with decomposing vegetable matter, taken from a neighboring ravine whose stream was nearly dried up by the advancement of the dry season. This practice was immediately stopped, good water was furnished for all purposes, and a sensible improvement in our bill of health took place.

Another exciting cause of dysentery was drinking excessive quantities of water, the quality being apparently good. We observed that a party of blasters, who were working in a rock thorough cut, exposed to the sun's rays from morning till evening, sweating most profusely, being very thirsty, and drinking a great deal of water to slake their burning thirst, suffered more from dysentery than any other class of men on the station. Precisely the same thing happened to the fresh parties who succeeded each other in the same rock cut. In this connection, we can with propriety quote from Mr. Lloyd, who, although a layman, seems to have been a trustworthy observer. Speaking of Porto Bello, he says, "The waters which run from the different mountains are particularly clear, and delicious to drink; but woe to the person who is rash enough to make immoderate use of them, their very excellence being their misfortune, as they cause dysenteries from which few escape; and almost all the fevers of the country degenerate into this disease."* The modus

* Vide Rockwell's Report, p. 471.

operandi of the exciting cause of dysentery under consideration was probably as follows: the large quantity of liquids thus taken into the stomach could be only partially absorbed, on account of the enfeebled tone of the organ, and the pre-existing chronic distention of the gastric veins, and the balance remaining was poured into the intestines, giving rise to a flux of greater or less severity, according to the pre-existing pathological state of the intestinal mucous membrane.

Another common exciting cause of dysentery was cold. At first sight such a thing seems scarcely possible in a climate where the difference between the hottest and coolest part of the day is but 10° Fahr., and the change between the extremes always occurs gradually. But when we reflect upon the strong proclivity to diarrhœa and dysentery, which people exhibited on the Isthmus of Panama; when we consider the effect of excessive atmospheric humidity in rendering the body more sensible to slight changes in temperature, and above all, when we remember the sensations of chilliness always felt towards morning on the isthmus by persons sleeping without blankets, or whose covering had been accidentally removed, we cannot doubt the morbid influence we have ascribed to colds. By it the cutaneous perspiration was checked, and if there was not a corresponding increase in the urinary secretion, a catarrh of the abdominal or respiratory mucous membrane was frequently occasioned, or even a high grade of mucous inflammation was lighted up in the large intestines. A similar result was often produced by remaining in wet clothes, and in a similar manner. In these cases, the diminution of temperature was occasioned by the rapid evaporation consequent upon the heat of the climate.

The last exciting cause of dysentery which we shall mention, was a neglected or badly treated catarrh of the bowels. We not unfrequently saw patients, who, after having a catarrhal diarrhœa for three or four days, to which at first they paid no attention, finally become severely sick of the disease under consideration.

No facts came under our observation on the isthmus, which would warrant the opinion that dysentery was propagated by *contagion*.

The *symptoms* of a well-marked case were the following: a hot skin, increased frequency of the pulse, thirst, diminution of the urinary secretion in respect to quantity, and increase in respect to color; frequent small evacuations from the bowels containing mucus and blood, tormina, constant desire to go to stool, and ten-

derness under pressure at some part in the track of the large intestines. Generally there was more or less tenderness about the sigmoid flexure of the colon, in some cases the tenderness was confined to that locality, while in others it was diffused through a much larger portion of the colon, and in still others the small intestines were involved to a greater or less extent. Occasionally the stools presented a uniform color and consistence, closely resembling reddish jelly. In some cases the quantity of blood in the evacuations was small, appearing in the form of streaks, while in other cases the stools consisted of little else beside blood. Sometimes the symptomatic fever accompanied the early symptoms of the local disorder, at other times it made its appearance afterwards, but in mild cases it did not appear at any time. The attack rarely commenced with a rigor.

Treatment.—We endeavored first to surround the patient with the external conditions most conducive to recovery. He was directed to maintain the recumbent posture in bed, his room to be well ventilated and kept free from bad odors, to take no food except a little thin arrow-root carefully prepared, or a little rice water, and to take drinks of any kind but sparingly. We sometimes experienced considerable difficulty in enforcing the latter injunction, on account of the patient's intolerable thirst. But large quantities of liquids even of the blandest character, taken into the stomach of dysenteric patients, almost always did harm by exciting the peristaltic action of the intestines, a result we wished specially to avoid, except there was a manifest indication to pursue an opposite course. If there was considerable tenderness of any part of the belly, if the patient was tolerably robust, and especially if he had been in the country but a short time, we directed six or eight ounces of blood to be taken from the seat of such tenderness by cups, a warm poultice to be applied immediately afterwards, and kept on the belly till the inflammatory process was arrested, or till another procedure became necessary. We had no leeches. They could have been applied to the anus with benefit in many cases. We usually commenced the internal treatment by the administration of from four to eight drachms of castor-oil, containing from ten to twenty drops of laudanum to prevent griping, and a few grains of calcined magnesia if the discharges were acid. The laxative was administered for the purpose of unloading the intestines, thereby diminishing or even removing entirely a powerful source of local irritation. As soon as the laxative had operated satisfactorily, we commenced the internal use

of antiphlogistic remedies combined with a suitable quantity of opium, giving the narcotic for the purpose of quieting the peristaltic action, and relieving the patient from the tortures of the tormina and tenesmus. Our usual prescription was calomel and opium, of each one quarter or one half a grain, combined with a little powdered sugar, and taken every second or fourth hour according to the urgency of the symptoms. We administered the calomel for the purpose of arresting the inflammatory action, i. e. as a pure antiphlogistic. In administering opium we were careful to avoid the depressing effect of narcotism. If the latter remedy did not agree with the stomach, morphine in corresponding doses was substituted. In severe cases of gastric irritability, the calomel was plainly contraindicated, and then we relied principally upon the local treatment to effect a cure. The anodynes, in the small doses mentioned, were almost always sufficient to fulfil our purposes. If the gastric irritability prevented their administration by the mouth, or if in spite of their use the gripings and desire to go to stool continued greatly to annoy the patient, a circumstance we seldom saw, we directed a suppository containing from one to three grains of opium to be introduced into the rectum, or a small enema of starch containing from a half to a whole teaspoonful of laudanum. Sometimes we combined a half or even a whole grain of ipecac with each dose of calomel and opium, but generally did not see any benefit derived from this addition. As soon as the sympathetic fever abated we applied a large blister to the tender part of the belly, and did not hesitate to repeat the application if necessary. This remedial agent used at the time specified always did much good. Some patients were too weak to bear even the loss of blood by cups. The principal local measures prescribed for them, were warm poultices to the abdomen and blisters as soon as indicated.

Under the simple plan of treatment just detailed, commenced at the onset of the disease, the frequency of the stools was always much diminished, the quantity of blood and mucus was sensibly decreased, and in three or four days disappeared entirely, and the pain and tenderness subsided in a corresponding degree. We often noticed a marked change for the better in the dysenteric symptoms on the occurrence of ptyalism, which, for the most part, was speedily produced by the small doses of mercury that have been mentioned, and was always slight.

When the blood and mucus disappeared from the stools, or ptyalism occurred, the use of calomel was always suspended. Castor-oil

and laudanum, or other gentle laxatives, were administered as often as the fecal accumulations in the intestines indicated.

In many cases after the dysenteric symptoms had disappeared, a bilious diarrhœa remained for a longer or shorter space of time. To such cases we gave small doses of the bicarbonate of soda (two or three grains), combined with a little opium (one half a grain), directing a powder to be taken four or five times a day, or as often as the bowels moved. Keeping the patient at the same time on a light and unirritating diet, enjoining rest, and applying poultices or counter-irritants to the belly if there was persistent tenderness. The administration of an occasional laxative completed the treatment.

Sometimes, as already mentioned, the irritability of the stomach contraindicted the use of calomel, and then we relied principally upon external applications, to cure the disorder. We cupped, poulticed, and blistered after the manner already described. Internally we gave mucilage, alkalies in small doses, and opium. When the latter remedy disagreed with the stomach, it was administered per rectum. At the same time, laxatives were not overlooked.

Occasionally the discharges of blood from the bowels were so profuse as to threaten a serious impairment of the patient's strength. For the purpose of arresting this hemorrhage, we used acetate of lead, in doses of from one half to two grains, combined with a half a grain of opium, to be taken every two or four hours, and also directed external applications diligently to be made. In some cases of this sort, *warm poultices* seemed to be too relaxing. For them dry cupping, frictions of the abdomen with ol. terebinth, and the application of *dry heat*, seemed to be more serviceable.

We observed that the vegetable astringents, such as the extract of krameria, galls, etc., could be used with marked advantage soon after the subsidence of the acute symptoms. According to our experience this does not generally obtain in the treatment of dysentery at the North, and it seems to indicate that the abdominal mucous membrane is in a more relaxed condition among dysenteric patients on the isthmus, than here.

During convalescence much caution was necessary. We considered it advisable for the patient to keep his belly warm by the application of a flannel bandage, and above all to avoid errors in diet: for they might readily occasion a serious or even fatal relapse. The tonic bitter infusions, such as gentian, quassia and camomile, answered a useful purpose during the stage of recovery. It was also necessary to administer quinine in order to prevent the accession of

paroxysmal fever, on account of the strong proclivity to the fever which patients exhibited while enfeebled by a recent attack of dysentery.

In this connection it may be well to mention the treatment of the congestion and hypertrophy of the mucous membrane, remaining after a severe attack of acute dysentery, which succeeded best in our hands. We employed dry cups, and counter-irritation effected by occasional sinapisms, and by frictions of the belly with ol. terebinth, or a stimulating liniment two or three times a day, keeping the bowels warm at the same time. Internally we gave the nitrate of soda dissolved in mucilage, and combined with opium, in doses of five or ten grains of the former and a quarter or a half a grain of the latter, to be taken every four hours. When the irritability of the intestinal mucous membrane was not very great, we administered the muriate of ammonia in doses of from five to fifteen grains, combined with a little opium, with excellent results. Indeed we are not acquainted with any remedy which is a more reliable resolvent of chronic congested states of the pulmonary and intestinal mucous membrane, unaccompanied by ulceration, than the muriate of ammonia. When the cure was further advanced the tonic bitters were administered, and the vegetable astringents if the bowels seemed to be relaxed. At the same time a light, nourishing, and bland diet was allowed.

Such is a brief outline of the treatment of acute dysentery which we followed on the Isthmus of Panama. Its results were very satisfactory, for, of forty-eight cases, treated anterior to the 1st of May, 1851, at which time our record ceases, but one patient died, and he expired in a paroxysm of congestive fever which occurred unexpectedly, while he was convalescent from a severe dysentery, being still very weak. The cures were generally speedy and complete. The disorder became chronic in scarcely a single case. The patient who died of chronic dysentery and splenitis, mentioned in our last paper, was admitted from another station, far gone in his mortal illness. We had a great dread of the chronic form of the disease under consideration, on account of the sad havoc we had seen it produce among the soldiers after their return from Mexico.

We must now proceed to notice a morbid state of the economy which was not unfrequently associated with dysentery. Its description is introduced in this place, because, when thus associated, it might be entirely overlooked by a careless observer, both on account of the obscurity of its symptoms and the prominence of the dysenteric symptoms. This morbid state was *malarious fever*, often accompanied with *excessive congestion* of the *portal vascular system*, and some-

times, perhaps, with *stagnation* of the blood in the same system. In most of these cases a *complete* diagnosis was a matter of the highest importance. If malarious fever were present, and the dysenteric lesion alone were detected, and the treatment appropriate for it only were applied, the fever would be likely to go on from day to day, gathering strength with each succeeding exacerbation, wearing out the patient's strength, producing more and more trouble in the liver and spleen, increasing constantly the sanguineous engorgement of the abdominal viscera, and thus would react unfavorably upon the dysenteric process, and perhaps would even increase its severity in spite of the most active antiphlogistic treatment.

Again, when we reflect upon the important office which the liver performs in the animal economy as a blood gland, when we consider that the portal vein empties its contents into this organ for the purpose of being filtered (if the expression may be allowed) previous to their passage into the pulmonic and general circulation, we cannot be surprised that excessive congestion and stagnation of the blood in the portal vascular system, particularly in the liver itself, are productive of untoward results. Dysentery, when engrafted upon this morbid state of the organs and vessels just mentioned, is, in itself, frequently a matter of secondary importance. The inflammatory lesion of the intestinal mucous membrane is then but one of the consequences of the morbid state under consideration, and if the cause be removed, the effect will either disappear spontaneously, or be susceptible of an easy cure. But the dysenteric process becomes a matter of importance, on account of the capacity it has, in some cases, of reacting upon the blood in the portal vein, and engrafting upon it an *inflammatory dyscrasia*, whereby its coagulability is increased, and its tendency to stagnation promoted.

We can thus see how important a matter a complete diagnosis of dysentery was on the Isthmus of Panama The patient's welfare demanded that he should receive the treatment appropriate for the whole of his malady, not that for only a part of it. The diagnostician's duty did not end when he ascertained that the patient had dysentery; it was also incumbent upon him to ascertain *all* the *relations* of that disorder. By so doing, many symptoms developed in the progress of these cases, which otherwise were enigmatical, could be readily explained, and the treatment became more satisfactory to the practitioner and more beneficial to the patient. At the same time experience taught us not to under-estimate the difficulties which often lay in the way of a complete diagnosis, and stimulated us to use every means in our power for perfecting it.

If the pathognomonic symptoms of dysentery occurred subsequent to an attack of malarious fever, and before its paroxysms had been arrested, the diagnosis was not doubtful. Such cases might, with propriety, be called climate fever with the dysenteric complication. But the diagnosis was not always so easily made. It was generally established only by a rigid interpretation and careful analysis of all the symptoms. We recognized the presence of malarious fever in these cases by attention to the following points. The febrile excitement was often widely disproportionate to the extent and severity of the dysenteric lesion, as denoted by the character of the evacuations, the amount of tormina, tenesmus, and abdominal tenderness under pressure, and the previous duration of the lesion. Sometimes the accompanying fever was evidently paroxysmal in character, the exacerbation and remission being well marked, and occurring at corresponding hours on different days. Besides the high grade or paroxysmal character of the febrile movement, many patients complained of much more debility than the severity or the duration of the dysenteric process would satisfactorily account for. Again in most cases there was a peculiar appearance of the patient's countenance, said appearance being most marked during the exacerbation, which always led us strongly to suspect the presence of paludal fever. This facies cannot be adequately described by words, but the eye of the practised observer will scarcely fail to detect it. By attention to these points, the presence of malarious fever was generally detected. But cases not unfrequently occurred, which did not admit of a positive diagnosis: cases in which a careful examination of all the symptoms would only raise in our minds a strong suspicion of the presence of paludal fever.

It may be well to state in this place, that we not unfrequently saw dysentery supervene immediately upon the subsidence of the climate fever; and the fever in turn reappear on the departure of the dysenteric symptoms. We present a simple statement of the fact without offering any explanation of it.

The severity of the inflammatory lesion of the large intestines, thus complicated with paludal fever, and marked congestion of the liver, spleen and whole portal vascular system varied much in different cases. Sometimes it was so slight, that the latter were the principal disorders requiring treatment; while in other cases the dysentery was very severe.

In the treatment of these morbid states of the organism, co-existing in the same patient, we endeavored to arrest the dysenteric

process, principally by topical applications. If the patient was robust, a few ounces of blood were taken with cups; and in all cases the belly was thoroughly poulticed. But to arrest the febrile movement was a matter of the first importance, for its continuance produced increasing congestion of the abdominal viscera and abdominal veins in common with other internal organs, and seemed both to aggravate the dysentery and increase the difficulty of effecting a cure. The dysenteric symptoms were always much mitigated by the cure of the fever; and to produce this result we used the following means: The bowels were cleared out with a little castor-oil and laudanum, or, instead of this, a saline laxative (the salts of potassa were preferred) was administered, if the spleen was much enlarged, the skin jaundiced, the biliary secretion scanty, and the patient complained of sensations of weight and fulness in the belly. The saline laxative was repeated in a short time, if copious liquid bilious evacuations were not brought away from the bowels. By removing an engorged condition of the abdominal veins in this manner, both the febrile and the dysenteric symptoms were always considerably relieved. As soon as a remission occurred, we administered quinine in liberal doses combined with opium, for the purpose of arresting completely the paroxysms. Occasionally quinine was given during even the exacerbation. After the cure of the paludal fever had been effected, our attention reverted to the dysenteric lesion. If their use seemed advisable, blisters were applied to the belly. Calomel and opium or morphine were administered internally in the doses and manner already specified, and suppositories or enemata of starch and laudanum were employed. In cases where we could not positively diagnosticate the presence of paludal fever, but nevertheless had good reason to suspect it, we did not wait for time to render our opinion clearer, but proceeded in the treatment on the hypothesis that it was present. By so doing nothing was hazarded, and the patient was generally much benefited. Not unfrequently the accompanying malarious fever was bilious in character. In such cases early anti-febrile treatment was a matter of no mean importance. For many patients of this class calomel did not seem to be so well adapted either as a laxative or cathartic, as the neutral salts. It appeared to disturb the hepatic secretion, without unloading the turgid abdominal veins to the extent required. Sometimes we noticed at the commencement of an attack of the complicated form of dysentery, that the evacuations from the bowels were copious, and consisted principally of blood, as if nature had availed herself of the inflammatory lesion, to relieve the

distention of the portal vessels by pouring out their contents. In all such cases we were cautious how we interfered with the hemorrhage, and we never ventured to arrest it, except the patient's strength or life was jeopardized by its continuance.

It has been already intimated that the saline cathartics, and particularly the salts of potassa, succeeded best in our hands, for the removal of chronic congestive turgor of the liver, spleen, and portal veins. We most frequently used the cream of tartar, on account of not having at hand the other salts of potassa, but would prefer the soluble tartar. The bitartrate of potassa was given in doses varying from two to four drachms, and repeated every two or four hours till large, watery, bilious evacuations had been brought away, and a considerable increase of the urinary secretion had taken place. By free catharsis and diuresis produced in this way, patients complaining of great debility often said their strength was increased rather than diminished, and sometimes even the inflammatory lesion of the large intestine rapidly subsided. The rationale of this treatment is not difficult to be understood.

Dr. A. C. Baker, of Illinois, has informed us, that in his neighborhood (a malarious district) he had often met with cases of dysentery for which mercurials and opiates were worse than useless—cases which he cured by the administration of cream of tartar, in purging doses, while a large proportion of those treated by calomel and opium, with or without blood-letting, died.

VI.—Of Diarrhœa.

This disease also was exceedingly common on the isthmus. Almost every body had at least occasional attacks of it, and some persons suffered severely.

Besides that depending upon intestinal ulceration we noticed *three* distinct forms: *first*, the *simple*, or *diarrhœa crapulosa* of some nosologists; *second*, the *bilious*; and *third*, the *catarrhal*.

The simple form of diarrhœa resulted principally from excesses in eating and drinking. When food was taken in so great a quantity that it could not be properly chymified in the stomach, and absorbed by the lacteals, it ran off by the bowels, occasioning, in this manner, more or less flux. On the days when rations of fresh beef were dealt out to the men, we always expected that the following morning would bring us a large increase in the number of diarrhœa patients, and we were never disappointed. The fault did not lie in the quality of the

meat, but in the quantity which the people consumed. Those who partook moderately of it did not suffer at all.

In most cases the only treatment required was the complete removal of the cause. This we generally effected by a dose of castor oil, containing ten or fifteen drops of laudanum. But in some persons the intestinal mucous membrane was strongly predisposed to take on morbid actions, and the diarrhœa, though simple in its origin, was accompanied by prostration of strength, much griping, and tenderness of the belly. To them it was necessary to administer, besides a laxative, mucilage, small doses of opium, sinapisms, or poultices to the abdomen, and a light unirritating diet.

Bilious diarrhœa seemed to be directly occasioned by the excessive quantity and acrid quality of the hepatic secretion, and was one of the most common forms that came under our observation. The flux in these cases was occasioned both by the abnormal amount of bile poured into the alimentary canal, and by the morbid action (irritation), which its abnormal quality produced in the intestinal mucous membrane.

The following plan of treatment was adopted. At the outset a laxative was administered for the purpose of clearing out the bowels. We used castor oil and laudanum, infusum rhei cum sodâ. pulvis rhei et magnesia and seidlitz powders; but generally preferred castor oil and laudanum. To neutralize the acidity of the intestinal contents, and to allay intestinal irritation we gave powders containing two or three grains of the bicarbonate of soda, and one-quarter or one-half grain of opium every four hours, or as often as the bowels moved, commencing as soon as the laxative had operated well. Rest was also co-joined, and a light, bland diet, consisting of arrow-root, farina, or oatmeal gruel. The laxative was repeated every day or every second day if its use was indicated; but such repetition was seldom necessary. This form of diarrhœa was chiefly remarkable for the immense quantity of bile which patients sometimes discharged during the course of an attack. It will be seen that the object we had in view in treating this disease was not to arrest the hepatic secretion, but to improve the quality of that secretion and to shield the intestinal mucous membrane from injury. The excessive biliary secretion seemed in many cases to be a result of a salutary effort on the part of nature, and therefore not to be interfered with except for good cause. The arrest of the biliary secretion under such circumstances seemed always to threaten the patient with a very unpleasant consequence, viz., an attack of jaundice.

The remaining type of diarrhœa which came under our observation on the Isthmus was the catarrhal. The pathological lesion upon which it depended was catarrhal irritation of portions of the mucous membrane of the intestinal canal, of varying extent, accompanied by abundant secretion of mucus. Sometimes this morbid action was confined to the follicles and their immediate vicinity, while in other cases it was probably spread uniformly over a considerable portion of the intestinal mucous membrane. One of the most common causes of mucous diarrhœa was suppression of the cutaneous exhalation, effected either by exposure to the chilly air of the night, by remaining in wet clothes, especially when fatigued, and by standing or sitting in draughts of air to cool when over-heated. Associated with it we sometimes saw catarrh of the respiratory mucous membrane. The term catarrhal is applied to it, not so much on account of the relation last mentioned, as on account of the pathological lesion which produces it. The higher grades exhibited a strong tendency to run into dysentery. The most note-worthy symptom was the abundant quantity of mucus in the evacuations. It is scarcely necessary to mention that cold was not the only cause of catarrhal diarrhœa. Irritation effected by the acridity of the intestinal contents was also a potent cause.

Treatment.—Warmth to the belly and the internal use of some of the milder antiphlogistics, such as the nitrate of soda, and opium, with a suitable diet, was generally sufficient to effect a speedy cure. A favorite prescription was "nitrate of soda ℥ij. ; bicarbonate of soda ℥ss. ; tinct. opii ℥ij. ; mucilag. gummi acaciac. ℥ ij." Mix. Dose: one tea-spoonful every two or four hours. Or again we commenced the treatment with five or ten grains of blue pill, followed in a few hours with a table-spoonful of castor oil. After this had operated, the action of the bowels was controlled by small doses of opium, with or without alkalis. If the bowels were loaded, we always administered a laxative. If there was abdominal tenderness and much griping, counter-irritation by sinapisms, or hot poultices, were very useful.

It is almost unnecessary to state that we did not always see these three types of diarrhœa separate and distinct from each other, but that in the course of examining patients with a view to determine the precise pathological lesions upon which the diarrhœa depended, and of which it was, strictly speaking, but a symptom, we generally found the bilious and catarrhal forms commingled, and sometimes all three of them were present.

We saw but a few cases of the chronic forms of diarrhœa result-

ing from ulceration of the intestinal mucous membrane, on the Isthmus. We observed that people afflicted with pulmonary tuberculosis were very liable to attacks of diarrhœa, seemingly uncontrollable by art, and hence such people were immediately sent out of the country to a healthier climate, on ascertaining their true condition. There seemed to be not only a strong tendency to softening of the tuberculous deposits in the lungs, but also to tuberculous ulcerations of the intestines.

VII.—Of Neuralgia Miasmatica.

Several patients came under our observation, who complained of intense pain coming on at a specified hour mostly in the after part of the day or evening, unaccompanied by febrile movements of any sort. These pains would disappear in the course of the night, leaving the patient comparatively well till the corresponding hour on the next day, when they would return with all their original intensity. In every case these periodical pains were located either in the head, the sacral or the sacro-sciatic regions. The headache, which sometimes, but not always, was a hemicrania, was easily cured by the administration of large doses of quinine. Small doses generally failed utterly to accomplish the object for which quinine was given, and were therefore only an unwarrantable waste of a valuable remedy. Two or three doses, of ten grains each, taken in the interval, the last one about an hour before the time for the recurrence of the pains, were both necessary and sufficient to effect a cure. The sacral and sacro-sciatic pains sometimes required, in addition to this treatment, the local use of solutio veratrini (grs. ii. ℥i.)

VIII.—Of Coup de Soleil, or Sun Stroke.

Although the Isthmus of Panama lies under a tropical sky, and the sun is there vertical twice in the year, although the men worked mostly in the open air, still cases of sun stroke were by no means frequent. Our hospital record makes mention of but two, and the history of but one of them is contained in our notes. The subject of this was a Jamaica negro, aged about 30 years. Accompanied by others who worked in the same gang, he was walking in usual health on a newly made embankment, freely exposed to the rays of the noonday sun, when he suddenly fell, as if a violent blow had been inflicted on his head. He was immediately taken to the "Jamaica tent," and in fifteen or twenty minutes after the occurrence, we saw him. He was then ly-

ing totally unconscious, the pupils of his eyes were contracted, the surface of his body cool, the frequency and force of his pulse considerably below the healthy standard, and his carotid arteries throbbed violently. We caused his head to be raised and cold water to be poured on it in a small stream from an elevation of four feet. This was continued about twenty minutes when he recovered consciousness, and the surface of his body became warm again. The administration of a purgative was the only additional treatment required, and in a few days he returned to his work.

IX.—Of Panaritium.

Suppurative inflammations, involving the cellular and the fibro-cellural tissues about the hand, were very common, much more so than among the same class of people at the north. These inflammations were also less rapid in their progress, and therefore of longer duration than similar cases in New-York, and serve well to illustrate how much the vital powers of all northern people were depressed by the climate of the Isthmus. Indeed, the analogy between these cases and local inflammations, wounds, and bruises, occurring in persons whose constitutions are enfeebled by dissipation, hardship, or want of proper rest, is very striking. Another relation of panaritium worthy of note was the following: persons affected with it were very liable to be seized with the climate fever. This relation was also recognized by the natives, for when suffering from it they were careful not to expose themselves to the sun, lest, as they said, they might get the "calentura." We treated panaritium with ungt. hydrargyri smeared over the inflamed part, poultices, and free incisions made as soon as any matter had been formed. We had no leeches. The results of treatment were satisfactory in every respect, save the length of time required to effect a cure.

X.—Of Rheumatism

We formed the opinion that general rheumatic disorders are by no means frequent on the Isthmus. Though our observations were made on large bodies of men, we did not meet with a single undoubted case of even sub-acute rheumatism. We saw but three cases of scleroto-conjunctivitis, and were by no means certain that their paternity was rheumatic. They were easily cured by free purgation, blisters behind the ears, and by abstaining from the local use of cold washes during the first or acute stage. We also treated

one case of severe non-traumatic inflammation of the fibro-cellular tissue of the ankle joint, and of the metacarpo-phalangeal articulation of the index finger of the right hand. The accompanying sympathetic fever ran high. But this case differed essentially from genuine rheumatism, for it did not exhibit the slightest tendency to metastasis.

XI.—OF LYMPHANGIORITIS.

Enlargements of the lymphatic glands occurring rapidly, and accompanied with pain, heat and tenderness, were not uncommon. We frequently saw slight ulcerations or injuries of the extremities, speedily followed by inflammation of the lymphatic glands of the groin or axilla. Recovery in these cases was always slow. We may also remark in this connection, that gonorrhœal patients were very liable to get swelled testicles.

XII.—OF TUBERCULOSIS PULMONUM.

Some persons suffering from tuberculosis of the lungs came to the Isthmus with the hope that their pulmonary complaint would be benefited by the change of climate; but all of them who came under our observation learned, at a dear price, the falsity of this expectation. Such people were sure to take the climate fever, and to suffer very severely with it. We have seen them in the cold stage of a paroxysm breathing with extreme difficulty, their lips blue, their faces of a leaden tinge, their alae nasi in motion, their eyeballs starting from the sockets, in short, with symptoms threatening immediate suffocation. It sometimes appeared to require all the resources of art to carry them safely through the paroxysm. We have witnessed the terror they manifested lest another paroxysm should occur, and sometimes have turned it to practical account for hastening their departure from the country. If it is difficult for those whose constitutions are unimpaired to withstand the ravages of the climate, what prospect lies before the consumptive other than certain death? The atmosphere is loaded with moisture and saturated with malaria. If the vital forces of his economy are not overpowered and crushed by a single paroxysm of fever, they are rapidly undermined by the poisoned air he breathes; and by the recurrent febrile attacks, the work of the tuberculous softening is either started afresh or is accelerated with fearful rapidity when already established, and the tendency to fresh depositions of tuberculous matter is at the same time powerfully promoted. His

frame, already too much weakened by the climate and its diseases, is but poorly fitted to bear the exhaustion consequent upon pulmonary suppuration; and hectic with its profuse perspirations, diarrhœa sets in, his emaciation rapidly increases, his strength as rapidly declines; his feet become dropsical, and he sinks speedily into an untimely grave. Sometimes, this event is forestalled by a paroxysm of congestive fever, to which he becomes more prone with increasing debility, and he is thus suddenly cut off. Such is the history of most consumptive people who persist in the attempt to live on the Isthmus of Panama. We are not acquainted with a worse climate for northern people suffering from tuberculous consumption of the lungs than that afforded by this portion of New Grenada.

XII.—Of Hypertrophy of the Spleen.

In connection with this subject, we shall make but two or three remarks. Patients suffering from large ague cakes are apt to be tormented with palpitation of the heart. On this account it is sometimes distressing for them to lay upon the left side in bed while the splenic enlargement remains. At the same time a physical examination fails to reveal any structural lesion of the heart. Impoverishment of the blood is undoubtedly one cause of such palpitations. But it is not difficult for us to conceive that a morbid condition of the spleen may react through the ganglionic system upon the heart and seriously disturb its innervation. Again it is not difficult to comprehend, that a considerable increase in the size of the spleen (the enlarged organ being firmly pushed against the inferior surface of the diaphragm, thereby diminishing the freedom of its descent during inspiration, and sometimes perhaps causing it to become more arched,) may interfere with the action of the heart in a mechanical way. People having large spleens often complain of strong pulsations in the left side of their bellies. These pulsations we think are mainly produced in the manner above stated.

The treatment which in our hands was most efficacious for hypertrophy of the spleen was the following: if the organ was tender under pressure, and especially if the patient complained of pain located in it, blood was taken with cups and then a blister applied. In all cases where it was not contra-indicated, free purgation was employed with much benefit. We are not acquainted with any remedy which more rapidly diminishes the size of spleens affected with simple enlargement than the hydragogue cathartics. Muriate of ammonia given in full doses, and quinine also, are useful remedies. But

either of them when administered continuously for some time becomes comparatively inert. Much benefit was therefore derived from using them alternately. The iodide of potassium was also advantageously employed in treating this lesion. But the procedure which was far more beneficial than any other, was the removal of the patient to a non-malarious climate.

In order to complete this sketch of the disease of Europeans on the Isthmus of Panama, it is perhaps necessary to mention the catarrhal inflammations of the respiratory mucous membrane, pleuritis, and diseases of the skin. The first mentioned disorders were of frequent occurrence, and were readily amenable to treatment. We met with but two well marked cases of pleurisy. They were easily cured by local depletion with cups, by the administration of tartar emetic, and by the application of blisters as soon as the acute symptoms disappeared. Much care was necessary in using tartar emetic on the Isthmus, on account of the irritability of the gastro-intestinal mucous membrane. Concerning the diseases of the skin, peculiar to tropical climates and the parasitic animals which, it is well known, sometimes produce serious lesions of the human organism, our observations were neither sufficiently numerous, nor made with sufficient accuracy to warrant the description of them in this connection.

ART. VII.—*Cases in Surgery. Spontaneous Fractures; and Injuries of the Bladder.* By W. PARKER, M. D., Professor of Surgery in the College of Physicians and Surgeons, New-York. Reported by STEPHEN SMITH, M.D.

CASE 1.—*Fracture of the Os Brachii at the insertion of the Deltoid Muscle in a Colored Preacher while in the act of Gesticulating.*—I was called in consultation with Dr. Sargeant, in July, 1844, in the case of Mr. R. Jackson, a colored minister of the Methodist denomination, who was suffering from a fracture of his right arm. He was of a stout build, very muscular and well developed, thirty-eight years of age, having no hereditary predispositions, and had never previously suffered a fracture of any of his limbs. There was no circumstance connected with his history giving evidence of unnatural fragility of his bones. The accident occurred while warmly engaged in an exhortation in a religious meeting, and upon making a violent gesticulation. On examination, the right humerus was found broken at the attachment of the deltoid. Union took place in the usual time.

CASE 2.—*Fracture of the Clavicle of the right side upon striking a Dog a severe blow with a whip.*—This accident happened July 14th, 1845. The patient, Mr. George Potts, was a mulatto, aged 35, native of the West Indies, of a scrofulous habit; vivacious, active temperament, and very intelligent. He was fond of sports, and spent much of his time in hunting. In one of these excursions, in attempting to strike his dog with a heavy whip, the clavicle was fractured about its inner third. On examination, the bone was found enlarged at the point of fracture, and was evidently in a diseased condition. He had been under treatment previously for scrofulous affections. The bone united favorably, but he died three years after, of phthisis.

CASE 3.—*Fracture of the Os Brachii in attempting to throw a Peach.*—September 17th, 1849, I was called to see Mr. J. C. of Brooklyn, L. I., having a fracture of the right arm. Five years previously, this patient contracted syphilis, for which he was treated; he has since taken iodide of potassium pretty freely for the same disease. In other respects, he is of a healthy constitution, a fruit-dealer by occupation, and has no hereditary taint. This accident occurred upon flinging a peach, in the market, at one of his workmen. Union of the bone was prompt and satisfactory, and this arm is as useful as ever. His health is now robust.

CASE 4.—*Fracture of the Tibia, Femur and Clavicle.*—This patient, Miss K. P., of good constitution and healthy parentage, when between three and four years old, suffered a severe and protracted course of hooping cough. Before she had recovered from this affection, she was attacked with measles, about the middle of December, 1844, during which the lung became complicated, and her life despaired of. She, however, slowly convalesced, and during the spring following, 1845, took iodide of potassium and iron, for general treatment. Her health became in some degree established in the course of the following season. In February, 1846, upon stepping down a stair of six or eight inches, the right tibia suddenly fractured, the fibula remaining unbroken. The fracture was treated in the usual manner, and united favorably; her health still continued delicate, and her constitution feeble. In July following, while in the country for her health, she accidentally slipped upon a rind of pear, and the result of the sudden movement was a fracture of the thigh of the same side, about the junction of the middle with the lower third. This fracture also readily united, and the limb has now its usual

strength. Since this accident, she has had chronic synovitis of both knee joints. She had nearly recovered from this affection, when in November, 1851, she met with a slight fall upon her shoulder, and fractured the clavicle. This united, and now, at the age of eleven her health seems established.

Case 5.—*Fracture of the Femur—Non-union—Death. Cancer of the Lungs, and Cancerous Degeneration of the Extremities of the Fragments.*—Miss E. S., fifteen years of age, with no hereditary predispositions to disease, apparently in the enjoyment of substantial health, highly educated, and of a nervous temperament, has had, for upwards of two years, a small tumor, of the size of a walnut, on the inner aspect of the thigh, directly over the femoral artery. It has never caused her any inconvenience; is painless, and the lymphatic glands of this region have no appearance of being diseased. In December, 1850, while descending a staircase, and in making the last step, the thigh bone of the right side gave way and she fell helpless to the floor. The fracture was at the junction of the middle and lower thirds. During the first eight days, she had an attack of measles, but nothing occurred worthy of note. The fracture was treated in the straight position, and at the end of the fifth week the bone seemed united. During this time, however, the tumor of the thigh increased in size and ulcerated; the nervous system became involved, and her extreme irritability had frequently to be controlled with chloroform; and finally, upon starting from her sleep, the thigh was refractured in the former situation. The general system now sympathized more acutely, emaciation followed; the pulse became rapid, severe neuralgia constantly harassed her, and at length, about five months after the first accident, death put an end to her sufferings.

Autopsy.—Great emaciation; tumor, a large encephaloid growth in the second stage. Lungs both filled with cancerous masses, varying from the size of a shot to that of a walnut. In the thigh the callus had been removed, and an irregular encephaloid mass occupied its place; cancerous matter was also found deposited in the lower part of the shaft of the femur, and about the knee joint; it was detected in no other organs of the body.

Case 6.—*Fracture of the Os Brachii in attempting to extract a Tooth with the Key.*—Mr. C., aged 38 years, apothecary by occupation, fractured the right humerus in attempting to extract a tooth. Patient states that for more than a year he has suffered more or less pain at

the seat of fracture, that the bone has seemed to him weak at this point; and he has been in the habit of avoiding using it when any effort was required, for fear it might break. During this time, the bone has been much enlarged in this place, and he has taken pretty constantly iodide of potass. for the relief of nocturnal pains in his head and limbs. He has nodes on his head, and these, with the enlargement of the humerus at the point of fracture, and the peculiar pains, mark it as a genuine case of tertiary syphilis. The bone united readily, but still remains very weak and quite useless. Much less than the ordinary amount of force was used in extracting the tooth.

Remarks.—Spontaneous fractures are alluded to by but few authors. It must be seen from a perusal of the foregoing cases, their causes are the predisposing causes of fractures in general, which, as set down by authors, are old age, certain diseases of the bones, as fragillitas and mollities ossium, and rickets, and such constitutional vices as cancer, scrofula, syphilis, rheumatism, and scurvy. Examples of fractures occurring in the aged spontaneously, or from the slightest external causes, are frequent in the practice of every surgeon; old age is indeed pesumptive evidence of fracture in injuries befalling the bones. Dr. Good (*Study of Medicine*, vol. v., p. 332, ed. 3) mentions the case of a lady nearly seventy years of age, who broke both the thigh bones in kneeling in church; and on being taken hold of to be carried away, the os humeri was also broken without any violence and with but little pain. But those diseases of the osseous system itself, known as fragillitas and mollities ossium, and rickets, are more productive of this accident than all others. Examples under this head have been mentioned by early authors, but as some of the most striking instances have been recorded by Dr. Gibson, we prefer to quote him. (*Institutes and Practice of Surgery*, vol. i., p. 234, 8th ed.). "A patient of mine, a Mr. Green, residing near Trenton, in Jersey, has a son, now nineteen years of age, who from infancy up to the present period, has been subject to fracture from the slightest causes, owing to an extraordinary brittleness of the bones. The bones of the arm, forearm, thigh, and leg, have all been broken repeatedly, even from so trivial an accident as catching the foot in a fold of carpet whilst walking across the room. The clavicles have suffered more than any other bone, having been fractured eight times. What is remarkable, the boy has always enjoyed excellent health, and the bones have united without much difficulty or much deformity. The above was published in 1824; since then this patient died, in the twenty-third

year of his age, from partial dislocation of the first and second vertebræ of the neck, after a painful illness of fourteen weeks. Altogether he had experienced *twenty four* fractures." A second case was communicated to him by Dr. F. Mettauer of Virginia "Alexander Mc——, a native of Scotland, about seventy years of age, rather below the common stature, of ruddy complexion, neither lean nor corpulent, of a sprightly, though irritable and pugnacious disposition, had always enjoyed excellent health, an inhabitant of Petersburgh, Virginia, for twenty-five years, was so remarkable for his great liability to fracture his bones, that if he was seen a quarter of a mile from his dwelling, it was very common to hear some one say, "There goes old Ellick; I'll engage he will break some of his bones before he returns." He assured me that it always appeared to him from early infancy, that his bones were more easily broken than any other person's, and that he believed he could break the bones of the forearm any time by pressing them between his thumb and forefinger—that he had several times fractured the ulna, radius, os humeri, clavicles, in giving blows. None of his bones seem exempt from this extraordinary brittleness, for since my residence in P., I know of ten or twelve fractures of different bones. I think it probable more may have occurred during the same period; for latterly, the accident having become very frequent, his domestics managed his case, having from their experience, become expert bonesetters. The tibia, fibula, os femoris, have been broken several times from a sudden twist of the body, and from efforts to save himself from falls. His thigh bones have beon broken when attempting to get on horseback. His ribs have also been frequently fractured from slight causes. His speedy recovery astonished all who were acquainted with his case; for seldom, in any instance, has he been confined more than thee weeks.

The third case occurred in the practice of Dr. Elkinton, at Haddonfield, New Jersey, and is as follows. "In Jan. 1827, I was called to see Mr. B., a respectable man about forty years of age, he was seized with a fit, but when I arrived, had become tranquil; some medicine was directed for him, and as he was subject to epilepsy, I left him in charge of careful attendants. On my third visit, three days subsequently to his first attack, being alarmed at the contracted state of the pupil and other indications of disordered brain, a blister was ordered to the back of his neck, and upon removing his clothing a fracture of *both* arms was discovered above the elbows. Notwithstanding my investigations were made with the strictest scru-

tiny, I could not ascertain that the patient had received any injury either by falling out of bed or in any other manner. The only explanation I was enabled to assign for this strange occurrence was obtained from the report of his friends. They stated that during the night of his attack, while struggling in a fit, a very distinct noise or crack was heard, which, to use their own expressions, seemed as if he were breaking his bones. I have not the least doubt but that both fractures occurred at the time the noise was heard, from the force of muscular contraction operating on a system possessing some peculiarity in the organization of the osseous structure. This opinion was strengthened on mentioning the case to my senior colleague, Dr. Hendry, who had frequently attended the patient, and remarked at the time, it was very common for Mr. Barrett to have his bones broken. In a short time the bones were carefully reunited."

The fourth case is given by Dr. Goddard, of Philadelphia, September 27, 1832. Martin Stevenson, between three and four years old, fell from a step six inches in height, and fractured his thigh. When called to him his mother informed me that he had twice before fractured this thigh from very trifling causes. She also stated, that she herself had suffered from fracture once in the right thigh, and five times in the left. She first broke her left thigh, and found, upon recovery, that the right, from sustaining the principal part of her weight, was very painful, that at last it gave way on making a slight exertion, and shortened as much as the other had, during the cure, but has not been broken since. She also informed me that her brother, at thirteen, had suffered *two* fractures of one thigh and *nine* of the other, as well as *two* of the arm; besides which, one of his hip joints had been *dislocated;* from all of which he was perfectly recovered, with the exception of the deformity. Martin's thigh was firmly united in five weeks, and he was running about as usual. These people are of very short stature, and have small bones. Jan. 15th, 1833, Martin, whilst eating his supper, fell from his chair, and fractured both bones of the forearm, for which he is at this moment under treatment. He is now four years and one month old, and has had four fractures. Eight years after this last date, the whole number of fractures which this patient had suffered was fourteen; no instance is related where muscular action alone caused the accident, though they were generally the result of the slightet external violence.

In regard to carcinoma as a predisposing cause of fracture, S. Cooper remarks (*Surg. Dict., Art. Cancer*), "One of the most deplorable effects occasionally resulting from cancer is so great a fra-

gility of the bones, that those of the limbs are broken by the most trifling causes, as merely turning in bed, &c." It is especially worthy of remark that this influence of cancer on the osseous system, has been principally noticed where this disease attacks the breast. Desault mentions the case of a nun of Salpètriere, having a cancer in her right breast, whose arm was broken as a person was handing her out of a carriage; union did not readily take place, and afterwards, while changing her position in bed, the thigh bone was also broken. Sir A. Cooper relates similar examples in his lectures, and Mr. Salter of Poole, has reported two most interesting examples of this description (*Med. Chir. Trans.*, vol. xv., p. 136). The first case was that of a lady, æt. 80, whose right thigh suddenly broke while she was standing at her drawers. She had for several months suffered severe pain in the thigh, especially at the seat of the fracture, but it left her after the accident and never returned; she had long been afflicted with cancerous ulceration of the mamma. The bone was treated in the usual way, and at the end of three months had acquired some firmness, but as the ulceration of the breast increased after the fracture, she finally sunk and died. The second case was a female, aged 56 years, who, for five months preceding the accident, had labored under violent pain of the right thigh, and a thickening of the periosteum a little above the patella. Upon attempting to step into a cart the bone was broken three inches below the trochanter. For several years she had a scirrhus of the left breast, which had been removed, but broke out again in the form of cancerous ulceration. She survived the accident three months, no union taking place, nor did she suffer any more pain in the limbs. In Case 5 the cancerous deposit was in the lungs and affected bone, but its effect upon the constitution was seen in the fungous formation of the extremities of the fragments, as also in their non-union. Mr. S. Cooper has recorded a case (*Med. Chir. Trans.*, vol. 17, p. 51) of spontaneous fracture of the femur and a rib of a person who was found post-mortem to have suffered from cancerous disease of the bladder. The same appearances of the extremities of the fragments as were noticed in Case 5, was also observed in this case, viz.: "When the chest was examined, the fifth rib on the right side was found to have given way near its central part, the ends of the broken portion being at the same time involved in a scirrhous substance, which had quite as indurated a feel as the hardest kind of cartilage. The femur was surrounded at its broken part, and also for some extent above and below the fracture, with a mass of the same kind

of morbid tissue already specified, which here formed a thick protuberance, increasing very much the deformity noticed about the hip directly after the occurrence of the fracture. The consistence of this tumor was rather softer towards the bone, than more superficially, and from that part of it which lay near the facture, a reddish brown thick fluid oozed out. The greater portion of it, however, was peculiarly firm, and thickly interspersed with innumerable fragments of osseous matter."

Cases 2, 3 and 6 are instances in which the morbid fragility of the skeleton was traceable to scrofula and syphilis. Mr. Stanley (*Dis. of the Bones*, p. 239) gives a case very similar to Case 6 above. A female, aged 30, broke the humerus in the middle while raising a little chair; she had been under treatment for syphilis, and had suffered severe pain at the seat of fracture.

The same author records a case of *Fractures of the Humerus and Femora, following Rheumatism.* "A female, aged 24, was admitted into the Manchester Infirmary, in the supposition that she was suffering from rheumatism. As she was being carried up the staircase, the shaft of her left femur broke, and it was ascertained that nine months previously she had suffered a fracture of the left arm, in catching hold of a balustrade; this fracture had united, and the union of the fracture of the femur was also in progress, when, as the patient was being raised in bed, she felt a severe pain in the opposite thigh, and exclaimed that the bone was broken, which was found to be true." In another case, a female, aged 26, who had suffered rheumatism, fractured the femur while crossing the street. Two months after while under treatment for this fracture, and lying quietly in bed, the other thigh suddenly broke. Subsequently, and while still confined to bed, she suffered a second fracture of the left thigh and fractures of both tibiæ. No union could be brought about in this case, of any of the fractures, although "her general health was unimpaired, the appetite good, bowels regular, and the urine perfectly natural."

The *prognosis* in spontaneous fractures depends upon the nature of the various causes which thus predispose bones to this accident. It is seen by the foregoing examples, that in fragillitas and mollities ossium union has generally taken place readily, and in some cases even more quickly than in healthy bone. Mr. Stanley remarks, "It is remarkable that the fractures which occur in these cases, are generally accompanied by very little pain, and are followed by scarcely any inflammation in the part; it is still more remarkable, that not-

withstanding the unsoundness of the bone preceding its fracture, the union of it should take place in the ordinary period, and occasionally within it." Mr. Tyrrell says, "In the man who had so many fractures, the accidents were repaired with greater rapidity than I have seen in other individuals, the union of the fracture of the femur being perfectly firm at the expiration of three or four weeks" But when the system has long been the subject of a wasting or malignant disease, the same cause which rendered the bone liable to a spontaneous fracture, will prevent its reparation. The *proximate change* which is effected in the bony tissue in cancer and other grave diseases, is not well understood, but it seems probable, that alike as "in protracted cases of this disease (cancer), the mass of the solids diminishes, independently of any direct influence exercised by the morbid formation, and simply as a consequence of prolonged, deficient nourishment, exercise, &c. (*Walshe Nat. Treat. of Cancer*, p. 114). If, indeed, we could adopt the theory of Dr. Stark (*Ed. Med. and Surg. Jour. April*, 1845), which seems both rational in itself, and is rendered probable by experiment, that bone is a definite chemical compound formed by the gelatine and earthy salts; that the proportions of these constituents never vary where true bone exists, as plainly they could not according to the simple rule "that the same chemical compounds invariably contain the same elements united in unvarying proportions" (Fownes); that hardness of bone does not depend upon the amount of earthy matter contained in it, nor increased flexibility upon a diminished proportion of earthy solids in its texture, but in both cases upon the molecular arrangement of the ultimate particles; it would not be difficult to understand how a poisonous principle in the system might, by its influence over the vital actions, so change the structural arrangement of its constituents as to give rise to the different morbid states of flexibility and fragility. The *treatment* of this species of fracture does not differ from that practised in fractures in general.

INJURIES OF THE BLADDER.

Abscess of the Testicle—Inflammation extending up the Spermatic Cord and involving the Pubes and Parts about the Bladder—Sudden and copious discharge of Pus in Urine, with gradual Convalescence.—Wm. Richards, aged 21, a native of England, single, shoemaker, was admitted to Bellevue Hospital, February 15th, 1851.

Patient is of a delicate constitution, fair complexion, no hereditary predisposition to disease, has been subject to a cough occasionally from childhood; has had inflammation and suppuration of the glands of the right axilla. About the middle of last August an abscess formed in the right groin; the cicatrix is distinct and occupies the site of specific inflammations of this region; no cicatrix on penis, and he denies exposure for several months previously to the occurrence of this abscess. About the middle of December, while working at his trade and enjoying good health, the left testicle began to be painful and increase in size; he was obliged to suspend his work, and finally, after trying various remedies, entered the hospital. Upon examination the epididymis was found greatly enlarged, indurated and painful, especially the globus major, tenderness extending up the cord to the external ring; testicle uninvolved. Poultices were applied several days when the abscess pointed and was opened; a large quantity of healthy pus discharged. This matter was subjected to microscopical examination for the purpose of detecting spermatozoæ. but none were found.

Feb. 20*th.*—Improving; continue poultice. 22*d.*—Complains of pain along the course of the left spermatic cord, which is very tender on pressure up to external ring; discharge diminished; has headache; pulse full and hard; tongue heavily coated with a yellow fur. Ordered pil. mass. hydrarg gr. x; pulv. Doveri, gr. vj. 23*d.*—Pain, tenderness and swelling of cord increased; right spermatic cord slightly involved; considerable tumefaction and tenderness over pubes; pulse 120; skin moist, tongue furred as at last record; ordered leeches along the course of the cord, and a saline cathartic. 24*th.*—Leeches bled freely with some relief to local symptoms; bowels have been freely moved; tongue still coated with a thick yellow fur. Ordered locally lotio. opii et plumbi; and the following pill to be taken every three hours: hydrarg. sub. mur. grs. ij., pulv. Ipecac. grs., ij., pulv. opii. gr. $\frac{1}{2}$. 25*th.*—Better; continue treatment. 27*th.*—Symptoms all improving; pain and tenderness nearly gone; fever has subsided; discharges more abundant. Ordered quinine. Patient remained in this state up to March 16th, continuing the use of tonics and good diet to support his failing strength; at this latter date he was seized again with an inflammation of the cord which extended to the pubes and the parts adjacent, and was followed by extensive suppuration. 26*th.*—Abscess on left side of scrotum; another in left inguinal region over internal ring; discharge free from

first opening; patiente maciates; appetite variable; continue tonic treatment. *April 10th.*—Matter discharges from several openings about the pubes; right thigh involved in the suppuration, swollen, painful, constantly flexed; treatment continued. The case continued without much change, excepting the gradual emaciation of the patient, until the last of April, when there occurred a large discharge of pus with the urine. This was frequently repeated by day and night, sometimes amounting to a pint at one effort. The discharge from the old opening now began to diminish; his strength gradually increased with the return of his appetite, and to secure a regimen most favorable to recovery, he left the hospital for his own home, about the middle of May. He was heard from several months after he left the hospital, and had then so far recovered as to walk about, and the discharge of pus by the urethra had nearly ceased.

Rupture of the Bladder from the Introduction of a Foreign Body by the Urethra.—Successful Removal of this Substance by an operation.—Partial Recovery.—Imprudence of Patient.—Death.—This case was communicated to Professor Parker by Dr. D. Pond, formerly of Granville, Vermont, in whose practice it occurred in the year 1836. Peter Williams, fifty years of age, of a vigorous, healthy constitution, intemperate habits, by occupation a tanner and currier, has been in the habit for several years of practising masturbation. He has a wife and several children, but has had no intercourse with them for the last five years: he is very illiterate, half-civilized, and leads for the most part a solitary life. In the practice of his disgusting habit, he has been accustomed to amuse himself by distending the bladder with air blown through a tube, and then allowing it to escape, and irritating the genitals by various means: in this manner he has removed the hair from the pubes, and the adjacent parts have the appearance of unnatural treatment. Three years since, he obtained the penis of a bull: and after many painful attempts and with commendable perseverance, he succeeded in introducing a portion of it into the urethra; finding its removal rather difficult, he divided it at the meatus urinarius, and endeavored to force the portion introduced further forward. In this painful predicament he applied to Dr. Pond for advice, who removed the offending substance with a pair of long forceps. Some time after this adventure, he prepared for himself a bougie of lead, ten inches in length, three-fourths of an inch in diameter, and weighing seventeen ounces. While practising with this instrument, it slipped from his fingers and passed beyond his reach along the urethra. For several

days he went about in this condition, suffering from the irritation which this unaccommodating instrument produced, but unwilling to seek medical assistance. At length, however, he was compelled, by the severity of his sufferings, to yield, and he again applied to the doctor for relief, giving a simple explanation of his situation and the circumstances leading to it. Upon examination with the sound, the foreign body was easily detected, as also felt upon introducing the finger into the rectum. It was resolved to remove the lead on the following day, by an operation practised above the pubes. After consulting his physician, however, he went to the tavern, drank very freely, became quite humorsome, and then rode home in a lumber-wagon. His sufferings returned with the return of soberness, and early on the following day, in a paroxysm of dysuria, the bladder ruptured, and its contents, both urine and lead, passed into the cavity of the peritoneum. He satisfied himself of this fact by blowing through a tube introduced into the urethra, as formerly, when he could feel the air pass through the rent in the bladder into the abdomen. The proposed operation was performed, but for the purpose of removing the instrument from the cavity of the abdomen instead of the bladder. The piece of lead above described was found in the cavity of the peritoneum, entirely without the bladder, having escaped through a rent in the posterior part of that organ. The only further note of this case is, that for nine days he seemed in a fair way to recover; but at this time becoming unmanageable, the wound was broken open, and he died on the fifth day after, fourteen days from the occurrence of the accident. The most important practical points in the case are thus unnoticed: as to what was done with the fluid in the abdomen; how the rent in the bladder was managed; what course of after-treatment was pursued with so much success; the symptoms and their progress to the fatal termination; and, finally, the post-mortem appearances. As it stands, however, it is another novel instance of the singular instruments which inveterate onanists sometimes resort to, to accomplish titillation. The rupture was, probably, rather a puncture of the bladder, resulting from the constrained position of this metallic bougie.

Rupture of the Bladder, with Recovery.—Case 1st.—I was called on the morning of October 16th, 1838, to visit Mr. C., residing in the vicinity of Cincinnati, Ohio. Patient was about twenty-five years of age, an Irishman, laborer, of good constitution. Two weeks previously, while at work excavating a bank of earth, it fell upon him, injuring his left side and back, and severely contusing the left

hip. Following the accident, he was confined to his bed from inability to exertion, although he suffered no paralysis of the extremities; his bowels were readily moved by mild cathartics, and the bladder, which during the first week was relieved only by the catheter, for the last six days was able to expel its contents in obedience to the will. At the period of my visit, the urine contained pus, and the bladder seemed but partially emptied, even when a large catheter was employed. The perineum and the inside of the left thigh were largely swollen and of diminished sensibility; and a spot upon the latter of the size of a dollar, two and a half inches directly below the tuber ischii, was actually gangrenous, and beginning to separate. He had no appetite, but slight thirst, tongue thickly coated, skin cool, pulse 120, weak; bowels tumid, but easily acted upon by cathartics. Ordered, as general treatment, stimulants and anodynes, and locally stimulating fomentations.

October 22d, saw this patient again. His general system had improved, the slough upon the thigh had separated, and urine containing pus was discharging from the opening; nothing passed by the urethra. His appetite had returned, and the same treatment was advised to be continued. He remained under observation several months, during which the fistulous opening gradually contracted, and the urine began to flow by the urethra. At one time, two calculi of the triple phosphate were removed upon enlarging the fistula; they were of the size of a common bean. He passed from under notice before the cure was complete.

The two following cases are chiefly interesting as instances of recovery: the first, which we formerly made many unsuccessful efforts to obtain, is taken from *Rynd's Pract. Obs. on Strictures*, p. —; the second was communicated by Mr. Tompkins of Yeovil, to the *Provincial Medical and Surgical Jour.* for Oct. 20, 1851.

Case 2d.—A boy about ten years of age, standing on a dray or float on which there was a cask of sugar very imperfectly secured, unfortunately occupied the space between the front of the cart and its lading, when the horse accidentally fell, and the cask rolling forward jammed him against the cart and crushed him frightfully. He was brought to the hospital with his pelvis extensively shattered, his left thigh broken just below the trochanter, and, as very shortly appeared, his bladder ruptured also. He suffered intense pain, especially in the abdomen, which he could scarcely allow to be touched, but as the obvious injuries were so extensive the pain was chiefly attributed to

them; and he was placed in bed, and had some warm drink and other restoratives administered previous to being dressed. He very soon expressed a desire to pass his urine, but could not void a drop, and a catheter was then introduced, which drew off a very small quantity, deeply tinged with blood, but afforded no relief. These symptoms continued with great severity for several hours, except that sometimes urine flowed through the catheter, as if on these occasions its beak had been pushed through the rent into the depôt beyond it; but generally it did not, and in either case there was little or no alleviation of the distress. After the first twelve hours, the instrument always came out stained and blackened by sulphuretted hydrogen, and my colleague Mr. Porter, under whose care he was, remarked this as being a fatal symptom, having never seen recovery after it, a prognostic in which he was most agreeably disappointed. At the end of about forty-eight hours, a small abscess pointed at the left side of the navel, which being opened gave exit to an immense quantity of fetid pus and urine. This aperture became fistulous afterwards, and discharged clear and healthy urine whilst he remained in the hospital, which was more than three months. This boy recovered, and was seen and examined by several surgeons more than a year afterwards: the wound in the abdomen healed, and the water passed by the natural canal; but of the pathological process by which so fortunate a termination was obtained no one could form a conclusive opinion. It may be surmised that the extravasated urine had been more or less circumscribed, that it had induced inflammation which poured out coagulated lymph, and thus formed a cyst within which the fluid was completely insulated: but how it came to be regularly expelled afterwards, or what contractile force was exerted on it—in a word, how this newly formed sac came to perform the functions of a bladder, as it seemed to do, is a problem the solution of which surpasses my ingenuity.

CASE 3d.—The subject of this case was a man who, whilst undermining some earth in a deep cutting for a railroad, was thrown from a height of more than twenty feet; the ladder on which he was standing was knocked from under him by the sudden fall of an almost solid portion of earth, weighing several tons. The man fell on his back, and the pick-axe with which he was working, together with the ladder, were thrown several feet behind him. The main bulk of earth descended on his abdomen, and it required the united efforts of nine or ten men to lift it from his body. The surgeon who first

saw him, found the abdominal integuments much contused, and an extensive lacerated wound in the perineum, through which three fingers could be passed with ease, and which enabled him at once to discover that the bladder was ruptured. When seen by Dr. Tompkins, the patient was pulseless. There was considerable hemorrhage from the wound, which was three or four inches in extent, laying open the posterior portion of the urethra. Dr. T. passed his fingers through the wound, and found the bladder extensively ruptured, and at the same time introduced a catheter by the urethra, and brought it readily through the rent in the perineum. When reaction took place, the patient suffered most intolerable pain, accompanied with sickness and vomiting, for which a grain of opium was given every hour or two with the best effect.

Considerable sloughing of the integument of the abdomen took place. Fomentations and poultices were applied; the bowels were kept open by the aid of injections of castor oil; his strength was kept up, and opium given freely to soothe his pain, to the extent of from sixteen to eighteen grains a day. The wound soon began to assume a healthy aspect. A catheter was passed from day to day, and occasionally kept in the bladder a few hours at a time. At the expiration of two months the wound had healed, leaving the course of the urethra rather tortuous: but at the end of another month, when the man left the town, the bladder was so far restored as to enable him to retain from eight to twelve ounces of urine. With regard to the question how this wound was produced, Dr. T. observes:—"It is certain it was not from the entrance of any extraneous substance from without, for the man had on a pair of new corduroy trousers, suspended by his braces, and there was not the slightest rent about them. It is, therefore, evident that the weight and pressure of the earth compressed the bladder so completely within the pelvis, that the urine was sent forward with such force as to tear the urethra and the perineum in the manner described: and this tends to point out to us the utter impossibility of deciding in many cases, the precise mode in which wounds are inflicted, or the weapons or missiles by which they have been caused."

Remarks. In NO. 3, VOL. VI. N. S. of this Journal, we published some statistics of rupture of the bladder; since that date several cases have come to our notice which we will here briefly refer to, as supplementary to those tables. They do not, however, in any essential particular, modify the conclusions deduced from the facts then under consideration.

In the *Phil. Medical Examiner*, for Sept. 1841, a case is found taken from the London Lancet; the patient, a man aged 70 years, suffered from stricture: when he entered the hospital he had not passed urine in three days; the bladder was not relieved, and he died on the fifth day after the occurrence of complete retention. This is the first case we have met with where the patient was upwards of sixty years of age. The stricture was occasioned by a "warty thickening of the mucous membrane about an inch in extent." In Morland's "Extracts from the Boston Soc. for Medical Improvement" (*Am. Jour. Med. Sci. July* 1851), a case of "Fracture of the Pelvis, with Rupture of the Bladder," is reported by Dr. J. M. Warren. This accident happened from the falling of a bank of earth: the patient, aged 30 years, lived but an hour; the lesion of the bladder was apparent upon passing a catheter, its point being distinguishable in the cavity of the peritoneum. A case of rupture of the bladder, with very extensive injuries of the spinal column, was reported in the August No. of the *Northern Lancet*, by the editor. Another case was reported by Mr. W. E. Hole in the *London Lancet*, for May 1851: patient survived fifty-four hours. Professor Wernher has recorded a case in *Oppenheim's Journal*, July 1849, which terminated fatally on the sixth day. In the last number of this Journal, a case is reported by Dr. Dalrymple of Bellevue Hospital, in which the patient, suffering from fracture of the pelvis, lived thirty-two days, with many symptoms referable to rupture of the bladder; a condition of that viscus, found upon making an autopsy. A case of recovery was recently reported to the *Med. and Surg. Soc.* of this city by Dr. J. R. Wood, in which the fistulous passage above the pubes was closed by an operation. *Med. Times, June* 1852.

The fatal results of rupture of the bladder are consequent upon the extravasation of urine, whether this take place into the cellular tissue or the cavity of the peritoneum. In the former case, the patient sinks exhausted from the irritation of sloughing, and in the latter from peritonitis. The plain indications of treatment are to arrest this extravasation and remove the ill effects of the injury already done. The three cases of recovery above recorded agree in this particular, that the lesion of the bladder had an external communication immediately or soon after the accident; and it is to this circumstance, chiefly, that we attribute their favorable termination. In these instances the urine found a ready outlet, and was thus prevented from forming collections which should give rise to local or general irritation. The accident, in this respect, like many diseases,

may be considered conservative; and aside from other injuries which may complicate the case, it is reduced to a case of (traumatic) lithotomy. In three of the five cases of recovery recorded in the paper before referred to, the rupture occurred into the cellular tissue; in two of these, fistulous passages soon formed; while in the third, the lateral operation for stone was early resorted to, with the most decided relief. The results of these cases establish the importance of an immediate operation, which shall lay open a direct channel for the escape of the contents of the bladder, and prevent the further extravasation of urine. In these several cases convalescence dated from the occurrence of the fistulous passages; and in the latter, improvement followed immediately upon the operation, and a rapid recovery, although there were severe injuries of the pelvis. In many other cases where the urine has infiltrated the cellular tissue, and made its exit by a circuitous route, and the tedious process of sloughing, the patients have at length succumbed to the long-continued irritation. The introduction and retention of the catheter in the bladder does not, in the great majority of cases, accomplish any thing in the way of relieving it of its contents; for the first act which it performs subsequent to the accident, is to contract to its smallest capacity, and thus force the urine wholly into the abdomen; in this condition it afterwards remains, unless the rent becomes sufficiently closed to prevent the escape of the fluid. In this contracted state, the rupture, wherever its original seat may have been, whether at the fundus or base of the organ, is brought into the most depending position, and readily admits of the escape of the fluid, whether the catheter is introduced or not. Still more important is this operation, when the rupture takes place in the posterior part through the peritoneum; could further effusion be prevented, there would be left to the system to contend only with the peritoneal inflammation induced by the first extravasation. But the most conclusive argument that can be presented in favor of the immediate performance of the lateral operation on the bladder, as for stone, is the case of Dr. Walker, before adduced, in which it was performed with the greatest success, although under most unfavorable circumstances.

ART. VIII.—*Memoir on Nicotine*, by M. ORFILA. Translated by CHAS. A. LEE, M. D., *with notes:* Paris, 1851.

EVERY one has been made acquainted with the details of the horrible drama, which was recently unfolded before the Court of Assizes of Hainaut; how that Gustavus Fougnies was poisoned by *nicotine* in the dining room of the Chateau of Bitremont, at Bury, shortly after dinner in the same room. Although we have no information regarding the symptoms which he experienced, and which should be analogous to those I am about to describe, in speaking of the poisoning of animals by nicotine, yet we are certain that he died within five minutes after taking this alkaloid. The experienced medical jurist who has prosecuted the inquiry, has furnished the proof of the existence of nicotine in the digestive canal, and in the different organs of the unfortunate Gustavus, and has estimated at $7\frac{3}{10}$ qrs, the proportion of the alkaloid, which he found in the stomach. During several months after the apprehension of Mon. and Mad. Bocarme, I devoted myself to numerous experiments, in order to ascertain if it were possible to detect nicotine, whether it exist in the alimentary canal, or in the various organs after absorption; this problem appeared to me very important, inasmuch as this alkali kills, as it were, with the rapidity of lightning, and as it belongs to that class of alkaloids, against which it is believed toxicology is powerless. It will be seen on reading my memoir, that I have been able to surmount all difficulties, and that it is possible by very simple means, to detect traces of nicotine, in the liver, the kidneys, the lungs, &c.

On his side, M. Stas, the learned professor of Brussels, charged with the report, demonstrated, after a long, persevering and delicate investigation, that he had obtained nicotine from the body; and that Fougnies had died from poisoning by this alkaloid. The agreement of our results proves very clearly their correctness; especially, since each of us conducted his experiments, entirely ignorant as to the process by which they might be obtained; in fine, on the 20th of last May, I deposited at the National Academy of Medicine, a sealed packet, containing my memoir on nicotine, which I read at the sitting of the 3d June, and M. Stas wrote me on the 18th May, two days before, a letter from Brussels, in which he says:

"This language may surprise you perhaps, but surely, the observations which were daily made amply justify me. Strange; when no one knows of my labors; yet every one presents his objections; every one criticised me. I understand that the cause of all this is an opinion favorable to the accused; a sentiment I cannot blame; nevertheless, it inspires me with sad reflections on the weakness of the human mind."

After I had read my memoir, and the able essay of M. Stas, it was seen that the last was, as it should have been, more complete; we were, in fact, placed in different circumstances. I had experi-

mented on animals, to which I had administered nicotine; I knew that their organs would contain it, and I wished to show that it could actually be detected, and there was no necessity for using those minute and wise precautions, which were observed by M. Stas, so as not to lose an atom of matter, in seeking for what was unknown. Thus, in his investigation, nearly all the evaporations were performed in an apparatus sufficiently complicated and subjected to a current of hydrogen gas. When we reflect upon the facility with which organic substances are altered by heat, by the atmosphere, &c., we cannot but praise the rigorous procedure followed by the professor of Brussels, and follow it as a model, in all researches relative to the vegetable poisons. The suspected fluids, as I have always recommended in my works, should, above all, be evaporated *in vacuo*.

The following is the arrangement which I shall adopt in the following essay:

First. I shall describe the physical and chemical properties of nicotine.

Second. I shall point out the effects of nicotine upon the animal economy.

Third. Under the title of *Medico-Legal Researches*, I shall indicate the proper means of detecting this alkali, in artificial alimentary compounds, in the digestive canal, in the liver, the spleen, the kidneys, the lungs, etc.

Fourth. I shall examine whether nicotine may be discovered in the stomach of individuals, after having been a long time buried.

Fifth. I shall take up the question regarding the poisoning of Gustavus Fougnies.

I. *Of the Physical and Chemical properties of Nicotine.*

Nicotine had been first noticed by M. Vauquelin in 1809. Possett and Reiman obtained it in 1828 from different species of *nicotiona*, the *macrophylla*, *rustica* and *glutinosa*. MM. Boutron, Charlard and Henry made known some of its properties in 1836. (See *Jour. of Phar.*) Havana tobacco contains 2 per cent. of nicotine; Maryland 2.3, Virginia 6.9, Alsace 3.2, Pasde, Calais 4.9, Nord 6.6 Lot 8 per cent. It is included among the vegetable alkaloids, which are *naturally volatile*, and which do not exceed three in number, viz., *conicine*, *theobromine*, and it is composed entirely of hydrogen, carbon and nitrogen, it may be represented by one part of 1 equivalent of ammoniæ (H^3. N.) and one of carburetted hydrogen, containing 4 equivalents of hydrogen and 10 of carbon—H^4 C^{10}.

At the present time it is obtained by a much more simple process than that formerly employed; this process is now in use at the tobacco manufactory of Paris. A watery extract of tobacco is made; this is agitated with caustic potash—the nicotine is thus separated. It is again agitated with ether, which dissolves the nicotine separated, by the potash; it is then decanted, and the ether containing the nicotine is distilled at a very moderate heat, gradually increased. In separating the products, all the ether is volatilized; the heat is then

increased, and the nicotine obtained in the recipient—(*Schloessing*, Director of the chemical processes of the manufacture.)

Characters of pure Nicotine.

Nicotine is an oleaginous liquid, transparent, colorless, anhydrous, of a specific gravity of 1.048; becoming slightly yellowish after a time, and tending to become brown and thick on exposure to the air, by which it absorbs oxygen, with the odor of tobacco and a very acrid taste. It volatilizes at 250 degrees* (centigrade) and leaves a carbonaceous residue. The vapors which it gives off have the odor of tobacco, and are so irritating that one respires with difficulty in a place where a drop of this alkali has been evaporated. When we apply a torch or lighted candle to this vapor, it burns with a white fuliginous flame, and leaves a carbonaceous residue, like an essential oil. It changes to a deep blue, paper colored with turnsal, and reddened by acid. It is very soluble in water, in alcohol and the fixed oils, also in ether, which readily separates it from a watery solution. The great solubility of nicotine in water and in ether constitutes an important fact in its chemical history, since most of the other vegetable alkaloids, not to say all, if readily soluble in one of these liquids, are not easily soluble in the other.

Nicotine combines readily with acids while parting with its warmth. Concentrated *sulphuric acid* and free from color changes it to a wine red. On heating, it becomes thick and acquires the color of the lees of wine. On boiling, it becomes black, and separates from the sulphurous acid. With cold *hydro-chloric* acid, it gives off white vapors, like ammonia heated in the same way; if heated, the mixture becomes of a violet hue, the deeper in proportion as the ebullition is prolonged. *Nitric* acid, aided by gentle heat, gives to it a yellow orange color, and white vapors of nitric acid are disengaged, and then red vapors of hydro-nitric acid; if it is heated still more, the liquor becomes yellow, and by boiling acquires a red color, like that of chloride of platinum; and if we prolong the boiling we obtain a black mass only. Heated with *stearic* acid, it dissolves and forms a soap, which becomes solid on coating, and which is slightly soluble in water and very soluble in cold ether. As for the rest, the simple salts of nicotine are deliquescent, and crystallize with difficulty. The double salts which it forms with the different metallic oxides crystallize more readily.

The aqueous solution of nicotine is colorless, transparent, and strongly alkaline; it behaves with many of the reagents like ammonia, although it throws down a white precipitate, with the bichloride of mercury, the acetate of lead, the proto and bichloride of tin; a yellow with the chloride of platinum, and the precipitate is soluble in water; a white with the salts of zinc, and the precipitate is dissolved in an excess of nicotine; a blue, the acetate of the binoxide of copper; the gelatinous precipitate is soluble in an excess of nicotine forming a blue colored acetate, like that which ammonia forms with

* Boils at 375° F.—TR.

the same salt. It precipitates of an ochre yellow the salts of the sesquioxide of iron, and an excess of nicotine does not dissolve the precipitate. With the sulphate of the protoxide of manganese, it gives a white precipitate of oxide, which soon becomes brown on contact with the oxygen of the air. It separates from the salts of the chrome, the green binoxide. The red permanganate of potash is instantly decolorized by nicotine, as well as ammonia; nevertheless this last alkali acts more slowly, and should be employed in a much larger quantity.

The following reactions may serve to distinguish the watery solution of nicotine from that of ammonia. The chloride of gold produces a yellowish red precipitate, very soluble in an excess of nicotine. The chloride of cobalt is precipitated blue, which changes to green, and which does not readily dissolve in an excess of nicotine, whilst ammonia dissolves the green precipitate and tinges the liquid red. Iduretted water precipitates the solution of nicotine yellow, as it does also the chloride of platinum; with an excess of nicotine the color becomes of a pale yellow, and is decolored by the action of heat; ammonia, on the other hand, immmediately decolors the iduretted water, without rendering it turbid. *Pure* tannic acid gives, with nicotine, a very abundant white precipitate, whilst ammonia does not render this acid turbid, to which it communicates a red color.

Independent of these reactions, M. Stas has pointed out others, which I shall describe. Thus, he has found: 1st. That the chlorohydrate of nicotine, mixed with the chloride of platinum, furnishes, in the course of a few minutes, needle-shaped crystals of a beautiful yellow (quadrilateral, rhomboid), prisms soluble in water. 2d. That the protochloride of palladium causes, with nicotine, a chocolate-colored precipitate, soluble in an excess of nicotine; the liquid alkaline, and of a sharp, metallic taste, evaporates in a dry vacuum, leaves a colorless syrup, which gives off the odor of the alkaloid; this syrup, neutralized by a drop of hydrochloric acid, furnishes a liquid, red as blood, which, added to protochloride of palladium, in a quantity equal to that first employed, gives, in a day or two, flattened and very large crystals of a double chloride of palladium and nicotine.—(See, for some other properties, the medico-legal question, relative to the death of Fougnies, art. *Examination of the Stomach.*) If, to these chemical characters, which enable us so readily to distinguish nicotine, we add those connected with its action upon the animal economy, it will never be possible to compound it with any other substance. Observe the results of trials which I made in 1842 regarding this alkaloid, and which I published in 1843. (See the 4th Ed. of my *Grand Toxicology.*

II. *Effects upon the Animal Economy.*

Experiment 1*st.*—I applied three drops of nicotine to the tongue of a small, healthy dog. The animal immediately exhibited signs of vertigo, and passed urine; in one minute, the respiration was hurried

and panting; this state continued forty seconds, and then the animal fell on its right side and seemed intoxicated. Instead of exciting stiffness or convulsive movements, it was weak and relaxed; yet the fore legs slightly trembled; five minutes after taking the poison, it made plaintive cries, and the neck seemed slightly stiff, on carrying the head back; the pupils were excessively dilated, and the respiration calm, and not accelerated. This state continued ten minutes, during which the animal could not stand upon his legs. From this time, the symptoms diminished, until they gradually disappeared. The next day, the animal was well.

Experiment 2d.—I repeated the above experiment with five drops of nicotine on a similar dog. The animal exhibited the same symptoms, and died at the end of ten minutes; nevertheless, it offered slight convulsive movements.* On opening the body next day, the membranes of the brain were slightly injected, and the vessels which ramify on their surface were gorged with blood; this injection was strongly marked on the left side, and at the base of the brain, which was of ordinary consistence, and the two substances composing it, slightly spotted; the striated bodies were much injected, as well as the pons varolius. The membranes of the cerebellum were also much injected, as well as the other parts. There was considerable congestion of blood between the first and second cervical vertebræ on the right side, that is to say, on the side on which the animal fell. The lungs appeared normal. The heart, whose vessels were gorged with blood, was greatly distended, particularly on the right side, with coagula of blood. The left ventricle was empty. The superior and inferior *venæ cavæ* and the aorta were alike distended with clots of semi-fluid blood. The tongue was corroded on the median line, and towards its posterior third, where the epithelium was easily removed. The stomach contained a black, pitchy substance, and a bloody fluid, which seemed to be the result of sanguineous exudation. The duodenum was inflamed in patches; the rest of the intestinal canal was healthy.

Since that time, I have made the following experiments, which I have repeated with the same results; except that in certain cases I have found the blood contained in the cavities of the heart fluid, when autopsy was made immediately after death, although it speedily coagulated.

Experiment 4th.—I applied one drop of nicotine to the eye of a dog of moderate size, and at the same instant the animal exhibited vertigo, and feebleness of its limbs; one minute after, it lay down upon its *right side*, and had convulsive movements, which became stronger and stronger; its head was drawn back. At the end of two minutes the convulsions ceased, and there was extreme weakness. In five minutes after, the animal was able to stand, but could not walk. Ten minutes afterwards, it was in the same state, without

* This nicotine was evidently not anhydrous.

having vomited or passed urine. When urged to walk, it made some awkward steps, and vomited about four ounces of a grayish alimentary paste. At the end of half an hour, he was in the same state, and evidently on the recovery: the conjunctiva was evidently inflamed, and the cornea opaque over a greater portion of its surface.

Experiments 6*th*, 7*th*, 8*th*, 9*th*, 10*th*, 11*th*, 12*th*, 13*th*, 14*th*, 15*th*, 16*th*, 17*th*. These twelve experiments were made by M. Cl. Bernard; I shall omit them here, as they have been described in the *Annals of Hygiene*, vol. 34, p. 259.

The preceding facts show, first, that nicotine is one of the most active poisons, whether introduced into the digestive canal, into the veins, or applied to the subcutaneous cellular tissue, or the conjunctiva; second, that in very minute doses it causes, almost immediately, difficult respiration, and a violent and convulsive agitation of the diaphragm, which gives place to a peculiar puffing, various movements of the muscles, convulsive and tetanic, vomitings, alvine evacuations, &c.; third, that in a little larger doses, e. g., 8, or 10 drops, if introduced into the stomach, it occasions, at the end of a few seconds, vertigo, which causes the animal to fall, with frightful convulsive motions, with opisthotonos, followed in about one minute with entire relaxation; fourth, that, for the most part, in the last case, death takes place at the end of two minutes, unaccompanied by vomitings or stools; fifth, that it acts upon the nervous system.

III. *Medico-legal Researches.—Pure Nicotine.—Aqueous Solution of Nicotine.—Mixtures of Nicotine with wine, coffee, albumen; matters vomited, and those found in the digestive canal, etc.*

1. Anhydrous as well as hydrated nicotine, are distinguished by the methods already pointed out.

2. *Mixtures.*—I made a mixture of equal parts (16 grs. of each) of red wine, a decoction of coffee, and a watery solution of concentrated albumen; I added three drops of *nicotine;* the liquid was disturbed (clouded); I then evaporated it to dryness in a sand-bath. The product, when cold, was agitated for several minutes with sulphuric ether, the ethereal solution decanted, and evaporated when cold, left a very small quantity of yellowish nicotine; in short, the oily liquid closely resembled the nicotine which I had procured; it struck a deep blue with turnsal paper, reddened; it gave with chlorine of platinum a canary-yellow precipitate, soluble in water; when heated in a small capsule, it gave off white vapors, with a very penetrating odor of tobacco, and inflammable on the approach of a burning body.

Fearing lest the acids contained in the wine might have saturated one portion of the nicotine, in which case it would not have been taken up by the ether, I desired to know whether the matter, not dissolved by ether, contained nicotine. To satisfy myself on this point, I exhausted it by ether; and when it would take up no more of the nicotine, I added to the insoluble matter a drop of pure potash diluted with several drops of water, in order to decompose the salts of nicotine which might have been formed, and bring it to view;

I afterwards dried the matter on a sand-bath, and the product, when treated cold by ether, *furnished a new portion of nicotine;* suffice to say, that in all medico-legal researches respecting this alkali, if the matters in which we suspect its presence are acid, we should never omit employing the potash.

3. The same mixture was agitated, as soon as cold, in ether; it separated in a few minutes into three layers: the upper one, ethereal, *colorless;* the middle one, yellowish, opaque, efflorescent; the inferior, transparent, of a clear color, like coffee, infused in water. At the end of two days, when they continued in the same state, I separated the uppermost, ethereal layer, and by evaporation of the ether, obtained nicotine. The middle and inferior layers were then evaporated to dryness in a sand-bath; the residue, when cold, and treated with cold ether, yielded nicotine; in fine, on evaporating the ether, there remained an oily liquid, changing to a deep blue, reddened turnsal paper, throwing down a yellow precipitate pure chloride of platinum, and giving off, when heated, very copious and odorous vapors; nevertheless, the odor of tobacco was not so readily distinguished as in the preceding experiments; because it was, in a measure, charged with the strongly marked odor of red-herring. It seemed to me evident, after this procedure, that it is best, when we wish to separate nicotine from mixtures, similar to those of which I am speaking, to treat with ether the matters which have been evaporated to dryness on a sand-bath.

4. *Mixture of the same proportions of wine, coffee, and albumen, without nicotine.*

On drying this mixture on a sand-bath, and treating by ether, as in the first experiment, I obtained a small residue, which so far from being alkaline, reddened the blue paper of turnsal, but did not precipitate the chloride of platinum of a canary-yellow; and which, when heated, gave off fumes of a peculiar odor, *in no way resembling that of the vapor of nicotine.*

5. I reduced to a pulp in a marble mortar 2¼ ʒ of the liver of a dog, and added *two drops* of nicotine; after triturating five minutes, mixing as thoroughly as possible, I diluted it with 7½ ʒ distilled water, acidulated with three drops of pure concentrated sulphuric acid, and filtered it: the filtrated liquor, transparent, and of a citron yellow, reddened the blue paper of turnsal. I then introduced it into a retort, to which a recipient was adapted, and distilled over a sand-bath, until it was reduced to ʒ ij.: during this operation there was deposited on the sides of the retort, a small quantity of a yellowish organic matter. The liquid condensed in the receiver did not contain nicotine; the liquid which remained in the retort (ʒ ij.) slightly acid, was saturated so as to render it alkaline, by a few drops of a solution of caustic soda; then I introduced it into another retort, furnished with a receiver, and distilled it over a naked fire; *the condensed liquid contained nicotine.*—In fine, after concentrating it by evaporation on a sand-bath, in a small porcelain capsule, I tried it with the reddened turnsal paper, chloride of platinum, bichloride

of mercury, acetate of copper, and tannic acid, and obtained all the reactions of nicotine: moreover, in heating over a lamp one portion of this liquid, I readily obtained fumes which exhibited the characteristic odor of nicotine.

6. When we distil in a close vessel, or a sand-bath, an ethereal or watery solution of nicotine, whatever precaution we may take, there volatilizes with the ether or the water, but especially with the latter, a sensible quantity of nicotine.

7. I heated a quantity of stearic acid with three drops of nicotine, until the nicotine ceased to be dissolved in this acid; on cooling the mass took the form of a white soft soap, soluble in ether, slightly soluble in water; *it did not change to blue, turnsal paper reddened by acid.* On heating this soap with a sufficient quantity of powdered hydrate of lime, with potash or soda, it was decomposed, and when the mixture was heated over a naked fire, with an additional quantity of distilled water, the nicotine passed off into the receiver. The results of this experiment are important to know, when we seek to extract directly by ether, nicotine from the organs which contain it, since it produces with the fat of the organs a soap analogous to that which I have just described. *Experiments.*—I administered to several dogs, 15 to 20 drops of nicotine; the animals died in about two minutes, presenting the symptoms and lesions described under the 3*d experiment:* moreover, the blood contained in the cavities of the heart in most of the animals was fluid, where the body was opened a few minutes after death.

IV. *The Liquid found in the Stomach.*

The quantity of this liquid varied from two drachms and a half to three and a half, or four and a half drachms; it was yellowish, viscous, and somewhat thick. On washing the stomach and the inner surface of the esophagus, with a stream of distilled water, and uniting the water with the viscid mass, I obtained a solution strongly alkaline, and weighing from 15 to 24 drachms, which I divided into two equal parts, A & B.

A. The solution, saturated with a few drops of concentrated sulphuric acid, produced an *acid reaction.* I filtered and evaporated it on a sand-bath in a porcelain capsule to dryness; I again filtered it in order to separate the organic matters which had been deposited: the filtered liquor was acid. I then saturated it with pure caustic soda, and when it was rendered alkaline, I distilled it over a naked fire, in a retort; the liquid condensed in the receiver was transparent and strongly *alkaline;* I concentrated it on a sand-bath until I had reduced its volume to one-sixth, when it exhibited *all the reactions of nicotine.*

B. Macerated for several hours in sulphuric ether, and filtered; the solution afforded a liquid *not alkaline,* nor did it color blue, but slightly reddened turnsal paper; I evaporated it by a very gentle heat to dryness; the product was oily, saponaceous, and of a yellowish white. I made it alkaline by a little caustic soda. I then distilled

the whole over a naked fire in a retort; the liquid, condensed in a receiver, transparent and alkaline, was reduced to one-sixth of its volume by evaporation in a sand-bath, and then furnished all the reactions of nicotine.

The Stomach and Esophagus, thoroughly washed, and free from the preceding liquid.

On dividing these organs into two equal parts, and treating one part with cold water, sharpened with sulphuric acid, and the other with sulphuric ether, I obtained a sensible quantity of nicotine; whether I employed the same process, as I have just described with the liquors of the stomach (see A and B), or treated with ether, and subjected the ethereal solution, decanted, to spontaneous evaporation.

The Liver.—I crushed and reduced to a pulp in a marble mortar, the whole of the liver, cut into very small pieces. The pulp was divided into two equal parts, A and B. I left portion A for 18 hours in about 5 ℥ of water, acidulated with four drops of pure concentrated sulphuric acid, which was then filtered; the liquor was acid: I boiled it for two minutes in a porcelain capsule; it formed a very abundant, reddish gray *coagulum*. I filtered it again; the liquid, transparent, of a greenish yellow, and slightly acid, was reduced to one-fourth its volume, by subliming over a sand-bath; it deposited, during this operation, a considerable quantity of brownish flakes, which I separated on the filter. The liquor, slightly acid, waa made alkaline, by adding pure soda. I then treated this liquor by ether, and decanted; the ether was then evaporated in the open air, so as to get the nicotine. I then introduced it into a large retort, to which a receiver, which was plunged in cold water, was attached, and heated over a naked fire, nearly to dryness. During the boiling the matter frothed so much, that I was obliged to withdraw, for a time, the mattress from the heat, and this is the reason why I had a very large one. The liquor which was condensed in the receiver, was limpid, colorless, slightly alkaline, and exhaled a strong odor of nicotine; on concentrating it in a porcelain capsule in a sand-bath, it became more and more alkaline; when it was reduced to one-sixth of its volume it offered all the reactions of nicotine.

B.—I macerated this portion of the liver, for 18 hours, in 3½ ℥ of sulph. ether, and filtered it. The limpid liquor, evaporated as before over a gentle heat, was then dried on a sand-bath. Gradually, and in proportion as it was evaporated, it deposited a considerable quantity of fatty matter, like soap; the product reduced to dryness, took, when cold, the consistence and aspect of soft soap; when cold, and agitated with pure soda till it became alkaline, it was dissolved. In this state, after being introduced into a large retort, furnished with a receiver, which was plunged in cold water, and heated over a naked fire, it distilled a colorless liquid, transparent, slightly alkaline, and offering a feeble odor of nicotine. After withdrawing the liquid from the receiver, and concentrating it in a sand-bath till it was reduced to one-sixth of its volume, it presented all the reactions of nicotine.

The Blood.—I experimented only on 9 drachms of blood, extracted from the cavities of the heart, which I treated with water, sharpened by sulphuric acid, as I had done with part A. of the liver. After having subjected the filtrated liquor to the operations described under A. it was impossible to characterize the nicotine sufficiently as to affirm that it existed in the blood; but some feeble yet uncertain reactions, caused me nevertheless to believe that it was present. Is this result, proving so little, owing to the fact, that the blood on which I operated contained so small a quantity? or, might it not be owing to the facility with which nicotine abandons this fluid, as happens with so many other poisons? Every thing tends to show, that we may more easily detect this alkali, in operating on the blood of animals poisoned, which have lived from 25 to 30 seconds.

Spleen.—I left the spleen perfectly broken down, to macerate in a very feeble solution of caustic soda. At the end of 20 hours, I filtered and evaporated the liquor. When it had been reduced to about 6 drachms, I introduced it into a retort, and distilled over a naked fire to dryness. The liquor, condensed in the receiver, was limpid, colorless, *alkaline*, and of the odor of nicotine. When evaporated in a sand-bath, so as to concentrate it still more, it exhibited all the reactions of nicotine.

Kidneys.—These organs, treated with much diluted sulphuric acid, as before in the case of the liver, scarcely furnished any traces of nicotine.

The Lungs.—I obtained sensible traces of nicotine in experimenting on these organs with about 5 ounces of water and 4 drops of sulphuric acid, and in submitting the liquor, made alkaline by soda, either to the action of ether, or distillation over flame. (See *Stomach* and *Esophagus.*)

M. Stas, in his trials, in nearly all cases, treated the suspected matters with oxalic instead of sulphuric acid; the oxalate obtained, having been rendered alkaline by pure potash, was placed in contact with ether, which dissolved the nicotine, without acting on the oxalate of potash. The ethereal liquor was evaporated *in vacuo*, and the narcotine left behind.

Process.—The preceding facts led me to advise the following analytic process, in attempts to detect traces of nicotine in the matters contained in the digestive canal, or in the organs which have received it by absorption. The matters extracted from the digestive canal, or the organs of which I have just been speaking, should be placed in contact with 5 or 6 ounces of cold distilled water, acidulated with from 3 to 6 drops of pure concentrated sulphuric acid. After 5 or 6 hours of contact, the liquid should be filtered and evaporated in a sand-bath, until it is reduced to about one-third its volume. It deposits a notable quantity of organic matter only when the sulphate of nicotine remains in solution. On adding anhydrous alcohol to the liquor, after it has been decanted, a new quantity of organic matter is deposited; this is filtered and evaporated by a gentle heat in order to volatilize the alcohol. When the liquid does

not contain more volume than previous to its treatment with alcohol, it is saturated with potash or caustic soda. It is necessary to use an excess of one or the other of these substances, in order to make it sensibly alkaline. By this means the nicotine is separated, and is found mixed with the sulphate of potash or soda which has been formed. On agitating the whole with cold ether, which dissolves the nicotine without affecting the sulphate, we decant the ether, and evaporate it *in vacuo*, by the side of a capsule, containing concentrated sulphuric acid. If the experimenter has not an air-pump at his disposal, he can allow the ether to evaporate spontaneously, exposed to the cool air; in either case, *he will obtain nicotine.* Instead of heating the *alkaline liquid*, of which I have just spoken, by ether, he may submit it to distillation in a retort, over a naked fire, and receive the nicotine into a cold receiver, as I have stated in my account of experimenting for nicotine in the stomach and esophagus.

M. Stas, fearing lest the sulphuric acid might change a portion of the nicotine, concluded, as I have already said, to substitute for it oxalic acid. I see no objection to adopting this modification, although I am convinced that sulphuric acid in the state of extreme dilution, in which I employ it, can exert no bad effect. In short, in the numerous experiments which I have performed, I have never perceived the slightest trace of reaction with the nicotine, even when during the evaporation of the liquid to the third part of its volume, the sulphuric acid, *remaining free*, was become less feeble than when first employed.

IV. *Researches regarding Nicotine, in a case of judicial Exhumation.*

Experiments.—I poisoned dogs by introducing twelve drops of nicotine into the stomach: after death, which took place in from one to two minutes, I separated the stomach, which I had tied above the cardiac and below the pyloric orifice. I left the organ in a situation exposed to the air for two months (from 22d March to 23d May), the surrounding temperature varying from twelve to twenty-five degrees, centigrade. By the twenty-fifth of May, the putrefaction was at its height. I opened the stomach, and withdrew the alimentary mass, which was oily, thick, and very fetid; in general, I did not find much fluid in the stomach. After removing with care the mass, *which was alkaline*, and after scraping with a scalpel the interior of the viscus, in order to obtain the remaining matters, I macerated it for twelve hours in seven and a quarter ounces of water, to which five drops of pure concentrated sulphuric acid had been added. I filtered the *acid* liquor, then evaporating on a sand-bath until it was reduced to a very small part of its volume; it was left to deposit a certain quantity of animal matter. I then filtrated it, and continued the evaporation on a sand-bath until the filtrated liquor was reduced to six or eight drachms; *it was not sensibly colored.* After cooling, I agitated it with nine drachms of absolute alcohol, which precipitated a new quantity of organic matter; I filtered it; the liquor, still acid, was saturated and made alkaline by a solution of pure caustic soda.

The mixture, agitated with sulphuric ether, presented two layers: the upper one ethereal and colorless, the other watery and of a reddish yellow. The first of these layers, separated by the aid of a funnel and the finger, was placed in a small capsule of porcelain, and left to itself; the ether rapidly volatilized, and *left the nicotine pure.* In fine, the liquor had an oily consistence; it was strongly alkaline, and of a horrible smell: the bichloride of mercury, the chloride of platinum, the salts of copper, tannic acid, the permanganate of potash, &c., were affected by it, as by nicotine. On heating it over a fire, it gave off copious white fumes, having the acrid, irritating odor of nicotine.

The stomach, from which I had extracted the alimentary mass, above described, was cut into small pieces and repeatedly washed with distilled water, until the waters were no longer alkaline. In this state, the stomach, perfectly free from the alimentary material, was left for twelve hours in seven ounces of distilled water, acidulated with five drops of pure concentrated sulphuric acid; the sulphuric liquor, filtrated, was acid: subjected to evaporation on a sand-bath, and to the action of absolute alcohol, of soda, and of ether, as I had done with the alimentary mass, *it furnished a certain quantity of nicotine*, easily recognizable by the characters already pointed out, in speaking of that obtained from the former. Under certain circumstances, I would heat the sulphuric liquor saturated with soda in a distilling apparatus over a naked fire, and obtain the nicotine in the recipient. If instead of experimenting upon the stomach of animals when much decomposed, we bury the dogs which have been poisoned with a few drops of nicotine, we shall find this alkali in the digestive canal of those animals which have been buried for two, three, or even a greater number of months.

There is no doubt but that, on analyzing the liver, the lungs, and the other organs of animals, we can discover a certain amount of nicotine after many months of inhumation.

Thus I communicated to the Academy the facts relative to the search for nicotine, in organs which had undergone putrefaction, at the sitting of the 24th June, and established the position that we may detect this alkali three months after death.

I shall conclude by one observation, which is not without importance. M. Leseur and myself (*see 4th ed. of my Legal Med., Art. Judicial Exhumations*) have proved that we may detect *morphine*, *strychnine*, and *brucine*, many months after the mixture of these alkalies with the organs which afterwards had undergone the putrefactive decomposition completely; we see that the same holds true with regard to *nicotine*, and probably *conacine* also. How can we avoid being struck with the resistance which these *azotized* bodies oppose to most destructive agents, if not all organic substances? And is there any necessity of pointing out the importance of these researches, as connected with the suppression of crimes?

Note A. [It has been proved by E. Davy that *nicotine* exists in the leaves, root, and seeds of tobacco, and may be obtained by heating them

with water acidulated with sulphuric acid, concentrating the solution, and distilling with lime or magnesia. The product of distillation is a solution of ammonia and nicotine, which is to be saturated with sulphuric acid and evaporated to dryness; the sulphate of nicotine is then dissolved by ether, and decomposed by hydrate of baryta, while the nicotine is obtained by spontaneous evaporation—Pereira states, that to obtain it pure it should be distilled by an oil bath at the temperature of 228 F. It is a colorless, liquid, volatile alkali, having an acid. burning taste, and the odor of tobacco; restoring the blue color of reddened litmus, and rendering turmeric brown. It boils at 375 F., and at the same time, according to Thomson, undergoes decomposition. It becomes brown and thick on exposure to the air, is combustible with the aid of a wick, soluble in alcohol, ether, water and the fixed and vol. oils, forms salts with acids, most of which are crystallizable; atomic weight 210. A white flocculent precipitate takes place, when the acetate of nicotine is heated with a solution of bichloride of mercury, and a yellow granular precipitate, with chloride of platinum. The precipitates, which are double salts, lead to a suspicion that ammonia was present in the nicotine salt. Heated with water, the yellow precipitate obtained by chloride of platinum is converted into the platinum bichloride of ammonium. According to Thomson (*Organ. Chem.* p. 286), the following are the quantities of nicotine yielded by 1000 parts of various kinds of tobacco—Cuba, 8.64, Maryland 5.28, Virginia 10, Ile de Bilain 11.20, Lot 6.48, North 11.28, Lot and Garonne 8.20; for smoking 3.86. Nicotine is doubtless one of the most violent poisons known.

Nicotianin of Hermstadt, or the *tobacco-camphor of Gmelin*, is the concrete vol. oil of tobacco, which is obtained by submitting tobacco leaves to distillation in water, 6 lbs. of the leaves yielding about 11 grs. of oil, which swims on the surface; is solid, bitter, and has the odor of tobacco; volatile, insol. in water and dilute acids, but soluble in ether and caustic potass, and exciting in the tongue and throat a sensation like that produced by tobacco smoke, producing giddiness, nausea and vomiting when swallowed, and sneezing applied to the nose.

The *empyreumatic oil of tobacco* seems to be produced by the decomposition of some of the constituents of tobacco; is very poisonous, and has been supposed to be "*the juice of cursed Hebenon*," alluded to by Shakspeare (*Hamlet*, Act 1, Sc. 5), who also calls it a "*distilment.*"

The contents of *tobacco-smoke* are *carb. ammonia, acet. ammonia, nicotianin, empyreumatic oil, carbonaceous matter, moisture, and several juices.*]—TRANS.

[To be continued.]

PART SECOND.

CRITICAL ANALYSIS.

ART. VIII.—*A Treatise on the Diseases of the Chest; being a course of Lectures delivered at the New-York Hospital.* By JOHN A. SWETT, M. D., Physician to the New-York Hospital; Member of the New-York Pathological Society. New York: Appleton & Co. 8vo., pp. 590.

IT is not easy nowadays to write any thing new in regard to Diseases of the Chest. The subject has of late years received so much attention from such a number of able and careful observers, that it is almost as completely exhausted as the patients of a clinical professor after the visits of his class. The same is true in a less degree of other branches of medical science. When, therefore, we take up a new treatise upon almost any *class* of diseases, embracing a large field of inquiry, we are satisfied if we find occasionally a new theoretical suggestion or a new practical hint. We are prepared to find the bulk of the work consisting of old knowledge. There are certain subjects upon which we cannot reasonably expect ever to obtain much more light than we at present possess. Many of the physical signs, for example, will be known for ever not more certainly than they are now known. The dulness of pleuritic effusion, the crepitation of pneumonia, the metallic sounds of large cavities, remain the same to us as when they were first observed, and will doubtless for ever remain the same, having passed into the general stock of permanent and positive knowledge. The power to make use of this knowledge will of course depend upon the natural gifts and acquired tact of each individual observer, but the thing itself will remain fixed as a mathematical formula.

But although a large portion of almost every book treating of a subject which has long engaged the attention of men of science, must consist of a repetition of received truths, it by no means follows that all are equally useful to the reader. Knowledge must be communicated in an attractive form. Systematic arrangement, clearness of

expression, and the general graces of style must be made to observe the main object. The absence of these may indeed be tolerated in works which profess great originality of thought, but their presence is almost essential to secure, even to such works, a high place among what may be considered classical writings. Hence, when we take up a new work, as at present, to examine it critically, we do so scarcely so much to see what the author has said as how he has said it.

We have read the work before us with much care and interest. Occupying a position second to none in the city or state, in the judgment of the profession, so far as relates to the branches of which this volume treats, its author has been widely known as a pathologist and skilful diagnostician. We had a right, therefore, to expect, and did expect, something from his pen which should be creditable to our medical literature. Nor have we been disappointed. It must be apparent to any one who reads Dr. Swett's treatise, that he possesses in a high degree that first requisite of a scientific writer, a perfect familiarity with his subject. He handles each topic in its turn with the unhesitating facility of an expert seaman who knows all the ropes of the ship, while his calm manner indicates the philosophic seeker after truth. The preparation of this work has apparently cost him but little labor. But the years which fitted him for the task were doubtless years of assiduous and devoted toil. The tree was planted early in a good soil. The care of years has brought it to maturity, and now he has but to shake it and the ripe fruit falls. And yet we are not entirely satisfied with the result. Our dissatisfaction, however, proceeds from longing rather than loathing. There is scarcely a sentence in the volume that we would have omitted, but there are some additions that might usefully be made. The book can hardly claim to be a complete treatise upon diseases of the chest, yet it certainly presents most of the practically useful points, and presents them in an attractive form. It is something more than an elementary work. He who knows only what it contains will yet know a great deal, and there is nothing in it the knowledge of which can be dispensed with at the present day by any one who would keep pace with the improvements of modern science.

Dr. Swett's style is easy and graceful, at the same time that it is remarkably clear and condensed. He never says a word too much, and when he repeats it is always something worthy of repetition. His opinions are convictions; and this leads him occasionally to state them as if they were settled facts, when those of other observers of high repute are unsettled or adverse. His illustrations are almost always happy, and his cases admirably selected and appositely introduced. On the other hand, the arrangement of subjects, especially in the first part of the work, strikes us as faulty. The following is the order adopted: Bronchitis, Pneumonia, Pleurisy Laryngitis, Emphysema, Tubercle, Cancer. We should have preferred to place Laryngitis and Emphysema within speaking distance of Bronchitis, but this is not a matter of very great moment.

Having thus alluded to the general characteristics of the work, let us now proceed to examine it in detail, following for the most part the lead of the author.

The first two lectures are occupied with an account of the physical, rational, and constitutional symptoms of diseases of the lungs, and contain as much information on these matters as we ever remember to have seen in the same space. The chapter on the physical signs is certainly, though not minute, a most interesting and comprehensive *resumé* of what is known in relation to them. We know of none which we should select in preference to it, to place in the hands of the student of auscultation at the commencement of his task. We perceive that the author adopts the commonly received explanation of the mechanism of crepitation, namely, the passage of air through the secreted fluid, and this might be taken as illustrating a remark made above in regard to his *ex-cathedra* manner of making statements. We confess we have never been entirely satisfied that this is the true explanation of the phenomenon, and should like to have seen it stated in a note that there is a difference of opinion on the matter. It is not our purpose to enter into a discussion of the point, and we will therefore simply refer the reader to the recent work of Dr. Walshe, who adopts a different view.

The disease first treated of by our author is Bronchitis, and the sketch he gives us is very good, including allusions to the various circumstances under which it occurs, and an account of whooping-cough. The statement that the expectoration of simple acute bronchitis is "frequently streaked with blood," seems to us rather too strongly put, and conflicting in some degree with the subsequent statements when treating of tubercle, in regard to the very general connection of the symptom with that disease. He adopts the opinion of Dr. Corrigan of Dublin, in regard to those cases of dilatation of the bronchi, attended by an atrophied condition of the surrounding lung, to which that author applied the name of "cirrhosis." This view regards the primary difficulty as an inflammation attended by deposits of fibrin in the intervesicular tissue, and differs from that of Rokitanski, who believes that it always commences in the smaller bronchial tubes.

The fifth, sixth, seventh, and eighth lectures, are occupied with pneumonia and its consequences. While speaking of the morbid changes occurring in this disease, the author alludes very briefly to the conditions known as splenization, carnification (not a result of pneumonia), and gangrene of the lung. We quote what he says concerning the latter condition.

"It is usual to class *gangrene of the lungs* among the consequences of inflammation. It is doubtful, however, whether this is correct, at least in a majority of cases. It seems to me that gangrene of the lung resembles very much the gangrene of the toes in old people, and I have long suspected that it originates in the same cause, viz., a loss of nutrition from obliteration of the arteries. The bronchial arteries which nourish the lung are remarkably small and

long vessels, and well suited to become the seat of obstruction from a variety of causes. Yet no one has yet established the fact whether they are obstructed or not in gangrene of the lung. The subject is worth a careful study."

It will be perceived that the author does not regard gangrene of the lung as generally a result of pneumonia. Observing this, an opinion in which we entirely agree, we naturally expected to find the subject treated of by itself in a subsequent portion of the book. But not so. The paragraph quoted above, together with about a page and a half descriptive of the appearances, are all that we find on this important subject. The view presented is well worthy of attention, and since the author has promulgated it, we trust he will devote himself (we had almost said sacrifice himself) to the work of ascertaining if it be correct, so that when his next edition appears we may have something certain to rest upon.

There is nothing in this part of the volume to detain us long. The treatment proposed for pneumonia is the usual one, depletion followed by antimony. He regards calomel also as a remedy of great power in this disease, though far inferior to the tartar-emetic, and complains that statistics are wanting to show their relative efficacy. If there is any fault to be found with the treatment advised, it is that it is rather too active. In the pneumonia of children especially, we should be indisposed to administer the antimony to the extent he recommends.

We pass next to the subject of pleurisy, under which head we find much that is very valuable. The remarks upon the subacute form of the disease, are well worthy of notice. Cases of this description commence with what appear to be rheumatic pains about the chest, unattended by the ordinary rational and constitutional symptoms. The prognosis is less favorable than in the acute form. The following case will serve to show the character of the affection, and will also illustrate the author's concise manner of narration.

"A gentleman, about thirty years of age, of a delicate constitution, but in the habitual enjoyment of good health, having lost near relatives by tuberculous disease, was first attacked with pain in the back, which was regarded by his physician as lumbago, especially as no pulmonary symptoms were present, and there was no febrile excitement. After a few days, the patient began to be affected by dyspnœa, especially in going up stairs. This led to an examination of the chest, and a copious effusion was found to exist in the left pleural cavity. The mode in which this case developed itself, as well as the constitution of the patient, led me when called in consultation, to form an unfavorable prognosis, although nothing but the evidences of pleurisy as yet existed; and this opinion was justified by the result. The case improved for a time; the dulness on percussion diminished, but finally remained stationary, with a feeble respiration and an occasional mucous rattle over the part affected. After an interval of a year, this case terminated fatally as tuberculous phthisis—a fact confirmed by post-mortem examination."

Dr. Swett does not believe in those cases of pleurisy with prevalent effusion, in which the matter is supposed to be evacuated by a species of metastasis, suddenly, through the kidneys or bronchial tubes, and seems to think that when a sudden discharge of pus occurs by the mouth, it is always consequent upon the communication of the abscess with a bronchial tube. He is in favor of the performance of paracentesis oftener and earlier than it has generally been adopted, and even in some tuberculous cases when hydro-pneumothorax exists, having seen two cases of this kind where so little disease appeared after death as to leave an impression on his mind that the operation, had it been performed, might have materially prolonged life. For performing the operation he recommends the use of a trocar in preference to any other mode, though he relates a case in which this instrument failed to penetrate the thick false membrane lining the pleural cavity. In this case pointing subsequently occurred and the patient died, when it appeared that the membrane had been pressed forward by the point of the trocar as well as by a probe which was "pushed forward its whole length and met with no obstruction." This could hardly have occurred had a lancet been employed, and is an argument in favor of a cutting instrument. The same thing appears to have happened more than once to Dr. Bowditch of Boston, while performing the operation as recommended by Dr. M. Wyman in the more acute cases. (See Am. Jour. of Med. Sciences for April, 1852.)

The author appears to have very little faith in diuretics in the treatment of this disease. Blisters also he seems to regard as of no great importance. It is curious to observe what different results follow the use of the same means in different hands.

Speaking of the bronchial respiration which is sometimes heard in pleuritic cases, he accounts for it by the supposition of miliary tubercles, pneumonia, or old and firm adhesions which by tying the lung to the ribs prevent its compression. He then proceeds to say that "this bronchial respiration is the rule and not the exception in the pleurisy of young children," and thinks that in these cases the same explanation will not answer, but that possibly it may be owing to the activity of the respiratory functions in children rendering the lung less compressible than in the adult.

We are constrained to take notice of what seems to us a very important omission in these chapters on pleurisy. It is the absence of any notice whatever of the phenomena of displacement. But for the faintest possible allusion to them on page 127, and one or two similar ones in the chapters on diseases of the heart, we might almost infer that he was ignorant of the whole matter. As this, however, is not a supposable case, we must attribute it to sheer carelessness. But whatever the cause, we regard the omission as highly censurable. As elements in diagnosis, these phenomena must always be regarded as exceedingly valuable. They are appreciable by many who are not adepts in physical exploration, and are important helps to all. A *very moderate* effusion into the left pleura will

serve to displace the heart to a considerable extent. More or less displacement occurs in almost every case. As dislocation of the heart is frequently one of the earliest effects of the disease, so its return towards the natural situation is one of the earliest signs of recovery. The heart will sometimes traverse the whole anterior part of the chest, when the fluid is undergoing rapid absorption, in the space of three days. The liver and spleen, too, are occasionally dislocated to a very considerable extent, and this of course involves a change of form in the diaphragm. Are these things of so little consequence that they require no special notice in a treatise like the one before us? We could pardon the slight put upon gangrene, and not wonder at the author's declining a very close acquaintance with that subject; but *this* is an affair of the heart, and neglect in such cases is inexcusable.

We must pass hastily over the chapters on Laryngitis and Emphysema. Into the first has crept, by a sort of *error loci*, a very interesting case of aneurism of the aorta causing death by pressure upon the trachea near its bifurcation (and perhaps, also, upon the pneumogastric nerve), and another of "thymic asthma," as it has been called. We shall make room for a part of the author's remarks upon the treatment of croup.

"In membranous laryngitis, or croup, the antiphlogistic treatment —venesection, leeching, antimonials, and especially mercury, is that usually resorted to. But it may be well questioned whether this mode of practice is really attended with much benefit. Certainly, most cases go on, without even a temporary improvement, to a fatal termination; and in the few cases that recover, it is doubtful whether the treatment has contributed much to the favorable result. It has been thought that the free exhibition of mercurials is beneficial, by favoring a change in the character of the inflammation, by promoting a secretion of muco-pus. In this way it is thought that the effusion of lymph may not only be controlled, but that the secretion of muco-pus favors the separation and expulsion of the membranes already formed. It is far from being true that the disposition to form false membranes is dependent upon the violence of the inflammation. Many cases of croup occur in feeble subjects in whom there is but little constitutional reaction, and post-mortem examination confirms the opinion that the local inflammation has been very moderate in degree. There can be no doubt, also, that many cases, which have yielded to the prompt and judicious use of antiphlogistic remedies, were cases of simple acute laryngitis without the formation of membrane, a form of disease attended by symptoms quite similar, in most respects, to those of croup; and in children, not apt to be attended by submucous infiltration, and quite curable in its nature. But when false membranes exist in the throat, and you have therefore reason to believe that they have extended to the larynx, the influence of curative means is far less decided. For myself, when I look into the throat, and find nothing there except, perhaps, the traces of simple inflammation—in children, certainly—I am inclined

to hope for a favorable issue; but if, on the contrary, false membrane is noticed, the prognosis at once becomes very unfavorable, and antiphlogistic remedies will avail but little. So unavailing have been the efforts of some of our best practitioners to cure genuine croup by antiphlogistic remedies—or by a perturbating treatment, consisting in the frequent administration of emetics in conjunction with antiphlogistic remedies, that some have thought best to abandon this mode of treatment, and to leave the case pretty much to the efforts of nature, administering anodynes, especially small and repeated doses of Dover's powder, and permitting the inhalation of the vapor of warm water, rendered emollient by medication. This mode of treatment, while it has not, thus far, diminished materially the mortality of the disease, is said to have been favorable to the prolongation of life, and to have been especially conducive to the comfort of patients, by diminishing the frequency and violence of the paroxysms of strangulation, which are so formidable and distressing.

"But are there no mechanical means to relieve the obstruction, analogous to the scarificator in cases of membranous effusion? There is reason to hope, and some reason to believe, that the application of the nitrate of silver to the larynx, 40 to 60 grs. to an ounce of water, by means of the whalebone and sponge, may be attended with benefit, especially in cases in which the inflammatory action has originally been inconsiderable, or has been subdued by other means. There is reason to think, that this remedy not only acts favorably upon the mucous membrane, but that this mode of application may be made useful by aiding mechanically, in the removal of loose or of partially detached membranes in the larynx. It is a mode of treatment fairly entitled to a trial before resorting to tracheotomy."

The remark which follows in regard to the "difficulty of applying mechanical agents to the larynx in croup" on account of the age of the patients, need not deter any one from attempting the operation, which we believe is now beginning to be recognized as a very important addition to our means of arresting this formidable disease. Most of those who have tried it regard it as of easy performance. It is but justice to say, that for this valuable improvement the profession is indebted to Dr. Horace Green of this city, whose name is not mentioned by our author. *Suum cuique.*

Pulmonary congestion, its causes and consequences, occupy come half dozen pages. Pulmonary apoplexy is, in the author's experience, a very rare disease. "During a residence of a year and a half in Paris," he observes, "where I was constantly in attendance upon the hospitals, especially those in which chest diseases were most frequently to be found, I did not meet with a single case of the disease. Since that time I have met with a few cases, and, I believe always in connection with one uniform condition of the heart, viz., disease of the mitral valve with hypertrophy of the right ventricle. These cases have always been attended with hæmoptysis, usually abundant, and followed by speedy death." This accords with the experience

of Walshe and other observers, except as to the amount of the hæmoptysis. Walshe remarks on this point, that "profuse hæmoptysis is singularly rare." He agrees with Dr. Swett as to the obscurity of the physical signs, and points to the condition of the heart, and the "darkish, dirty-looking" character of the blood expectorated, as the chief means of diagnosis.

We pass on now to the subject of tubercles in the lungs, which occupies nearly one hundred pages, and is one of the most interesting portions of the work. We commend the lecture on the Pathological Anatomy of Phthisis to attentive perusal. It affords one of the best views of the subject we have ever read, being perfectly clear to the young student, and sufficiently minute to satisfy the wishes of those more advanced in science. We might select any portion of it at random to illustrate what we have said of our author's happy manner of conveying instruction. But this is unnecessary, as in the quotations we have already made and have yet to make, ample evidence will be found of the truth of the remark. As the question of the vitality of the tuberculous product is of considerable interest, we give his opinions respecting it. He is disposed to regard the tubercle-cell as a distinct form of elementary cell, and tubercle, consequently, as a heterologous formation. So far as cell-development goes, this is evidence of an imperfect vitality. The changes which tubercle undergoes from the semi-transparent to the opaque, now explained by the microscope as consisting chiefly in an accumulation and increase of the tubercle cells, as well as the process of softening, like it commencing in the centre, and due to the liquefaction of the "interglobular hyaline substance," are both connected with cell-life. But Dr. Swett thinks the cases which have been recorded where capillary vessels have appeared to enter the substance of a tubercle, one specimen of which has come under his notice, are rather instances of deposit of the tuberculous matter around the vessel, without obliterating it, and do not warrant the conclusion that the product is ever organizable.

In regard to the causes of Phthisis, we are told:

"That the disease is most frequent at a certain period of life; that it attacks the two sexes in about equal proportions, males perhaps rather more frequently than females; that it is often hereditary; that no peculiar constitution of body or temperament is more liable to an attack; that certain professions or occupations are more liable to induce it than other occupations; that a continued residence in tropical climates does not exert a favorable influence on the disease, as it exists in the natives of temperate regions; that a sea life seems to exert a beneficial influence, especially in warm latitudes; and, finally, that neither the exercise of the vocal powers, nor the existence of acute inflammations of the chest, nor habits of gross intemperance, seem to exert an influence favorable to the development of tuberculous phthisis."

To establish these points, the author relies chiefly upon the statistics furnished by others. Among the authorities quoted are

Walshe, Louis, Lombard, Benoiston de Châteauneuf, the British Army Reports, and those of the former editor of this Journal, the late Dr Forry. A paragraph bearing upon the influence of intemperate habits deserves to be extracted:

"It is an important question to answer, How does the intemperate use of ardent spirits influence the production of phthisis? This is a delicate question; but I must state what I know about it. Two medical gentlemen attached to the public Dead-house in this city, in which bodies are deposited which are found in the streets, or without friends—discovered in about seventy post-mortem examinations of those who had died of the most confirmed and aggravated intemperance, not a single case of tuberculous lungs. A most surprising result, when you remember that this unfortunate class have, probably, long suffered from poverty, bad nourishment, and exposure to the weather; influences which are regarded as predisposing to the tuberculous deposit. It is a singular fact, also, that while phthisis is much more common in the West than in the East Indies, hepatic affections are comparatively rare. A large proportion of confirmed drunkards suffer also from hepatic disease. Is a tendency to hepatic disease antagonistic to the development of tubercles?"

A critical examination of the principal symptoms of Phthisis follows the lecture on the Causes. The cough, expectoration, dyspnea, pain, as well as the emaciation, rapid pulse, hectic fever,—all receive due notice, and their significance is duly estimated.

We quote from the seventeenth lecture, which treats of the diagnosis by physical signs chiefly, the following, upon an important matter which has been somewhat neglected by other writers on Diseases of the Lungs:

"An *infiltration of tuberculous matter* into the pulmonary tissues, sometimes occurs as the primary lesion in the place of the miliary granulations. It is not to be distinguished from the latter form of the disease, except by the physical signs. The infiltration is usually rapid, extensive, and affects frequently the lower and posterior portion of one lung. Hence you may expect to find many of the physical signs of pneumonia, with which, in its acute form, the disease is apt to be confounded. There is marked dulness on percussion, extending perhaps from the base of the lung to the lower angle of the scapula, but not usually passing a vertical line drawn from the axilla downward. The respiratory sounds may be simply feeble and indistinct, but generally you will hear a bronchial respiration; and as I think, possessing, sometimes at least, peculiar characters which distinguish it from the ordinary bronchial respiration of pneumonia. It gives the impression of air passing through fine tubes, and as if drawn through them by a sort of suction. In the early stage it is dry, but as the tuberculous infiltration softens, a mucous rattle is gradually established; and finally, when cavities form, a gurgling of mucus may occur, or even without their formation. In its early stage, especially if the infiltration is very great in degree, it might be confounded with pleurisy. The marked dulness,

the absence of respiratory sound which may occur in this case, would lead you to suspect a pleuritic effusion. But these physical changes will not probably pass the median line drawn downward from the axilla, as they would do, probably, in a case of pleuritic effusion. Neither will you detect egophony. You may, indeed, have your doubts, even after a careful examination; then wait a little before deciding. The future progress of the case will satisfy these doubts. Besides, in these cases, the rational and constitutional symptoms are those of phthisis, not those of pneumonia, or of pleurisy. The attack may be acute—indeed, it generally is so; but still the fever is moderate, the pain in the chest trifling or absent, and there is no characteristic expectoration. Consider also the general condition of the patient. Has he the aspect of phthisis? Is there an unusual acceleration of the pulse? Is there a tendency to night-sweats, and, above all, has hæmoptysis occurred?"

Excellent as this is, it was hardly worth while to repeat it in the next lecture. (See p. 283.)

Did our limits allow, we should be glad to extract other passages of great practical value, having reference to the diagnosis of phthisis, from pneumonia of the apex, pleurisy with abscess, and bronchitis, but we must pass on to other topics.

Dr. Swett, we are glad to observe, regards consumption as a disease admitting of a cure in many instances, and of palliation in almost all. The change which has occurred in the minds of the profession on this point within the last ten or fifteen years, is very remarkable, and has resulted from a more thorough understanding of the pathology and diagnosis of tubercle, and a more critical observation upon the effects of treatment. The consumptive patient is no longer abandoned, as was too often the case formerly, as soon as cavities were ascertained to exist, and even earlier. Even in cases which appear desperate, an effort is now made by scientific practitioners, if not to cure, at least to maintain a *status quo*, and to prolong life to its utmost possible limit. *Irritation* is now understood to be the material element in the progress of phthisis. Having removed as far as possible its causes, we treat its effects not without hope. No one can peruse the late reports of the London Hospital for consumption,* without a feeling of encouragement and just pride. They show by infallible statistics how much may be done, even in a climate confessedly unfavorable, and with all the disadvantages inseparable from a hospital, for the alleviation and cure of this still dreadful disease.

Dr. Swett's directions in regard to the treatment of phthisis, do not differ materially from those of other recent writers. They are not quite as full as we could desire upon some points. In connection with this subject, we find some most excellent remarks upon the influences of climate. These will, we trust, be read attentively, as they are peculiarly adapted to the wants of physicians in this part of the country.

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* See British and For. Med. and Chir. Review for Jan. 1849.

In regard to cod-liver oil, the author, while he does not deny that it is sometimes useful, thinks it is destined to share the same fate with antimony, digitalis, and iodine, which "have all had their day of imaginary success, and all been forgotten." We venture to differ from him on this point: not that we regard cod-liver oil as a specific in tuberculous disease; no one, we presume, so regards it; but that it is a most important adjuvant in the treatment of consumption, our own experience, as well as the testimony of some of the highest living authorities, does not permit us to doubt. Much of course will depend upon the judgment with which it is exhibited. To obtain its most satisfactory effect, the digestive organs must be in a good state for its reception. It must not be persisted in when it produces diarrhœa or vomiting. It must be discontinued for a time when it has become loathsome, to be subsequently resumed. Its most happy effect is to be seen when its use is commenced after the subsidence of those temporary periods of irritation which occasionally occur in every chronic case. It is worse than useless to pour down the immense quantities which have sometimes been given. We deem this a matter of so much importance, that we shall introduce here an extract from the late work of Dr. Walshe (no mean authority) in reference to it:

"I began to employ the oil," says Dr. Walshe, "at the Consumption and University College Hospitals seven years ago, urged to the step by the strong advocacy of Dr. Hughes Bennett, and took an early opportunity of testifying to its remarkable powers in the treatment of tuberculous and other scrofulous diseases. The conclusions at which I have arrived concerning its use in phthisis, are as follows: 1. That it more rapidly and effectually induces improvement in the general and local symptoms than any known agent. 2. That its power of *curing* the disease is undetermined;—I mean here, by "curing" the disease, its power of causing, along with suspension of progress, such change in the organism generally, as shall render the lungs less prone to subsequent outbreak of tubercles, than after suspension occurring under other agencies. 3. That the mean amount of permanency of the good effects of the oil is undetermined. 4. That it relatively produces more marked effects in the third than in the previous stages. * * * * 5. That it increases weight in favorable cases with singular speed, and out of all proportion with the quantity taken; that hence it must, in some unknown way, save waste, and render food more readily assimilable. 6. That it seldom fails to increase weight. 7. That in the great majority of cases, when it fails to increase weight, it does little good in other ways. 8. That it does not relieve dyspnœa out of proportion with other symptoms. 9. That the effects traceable to the oil in the most favorable cases are: increase of weight, suspension of colliquative sweats, improved appetite, diminished cough and expectoration, cessation of sickness with cough, and gradual disappearance of active physical signs. 10. That in some cases it cannot be taken, either because it disagrees with the stomach, impairing the appetite (without itself obviously

nourishing.) and causing nausea, or because it produces diarrhœa. 11. That in the former case it may be made palatable by association with a mineral acid; and in the latter prevented from affecting the bowels by combination with astringents. 12. That intra-thoracic inflammations, and hæmoptysis are contra-indications to its use, but only temporarily so. * * * 13. Diarrhœa, if depending on chronic peritonitis, or secretive change, or small ulcerations in the ileum, is no contra-indication to the use of the oil; even the profuse diarrhœa caused by extensive ulceration of the large bowel is not made worse by it. 14. The good effects of the oil are, *cæteris paribus*, directly as the youth of those using it,—a singular fact, which probably may one day (when the textural peculiarities of youth and age are better understood,) aid in giving a clue to its mode of action."

Dr. W. considers the brown oil the most efficacious of the three varieties.

But we must leave the subject of phthisis and omit that of cancer, which comes next in order, that we may have space to refer to some of the prominent features of that part of Dr. Swett's treatise which relates to diseases of the heart. This part is introduced by a very interesting lecture upon the heart as it is in health, which comprises a description of its position and the position of its orifices, an account of the different modes adopted for ascertaining its measurements, an explanation of its sounds, and directions for the physical examination, including that by auscultatory percussion as introduced by Drs. Cammann and Clark of this city. The experiments by means of water to show the manner in which the valves perform their functions are well discussed. With the tricuspid it has seldom been possible to prevent regurgitation, owing in part to the flaccidity of the walls of the auricle, and in part, the author thinks, to the probable fact that regurgitation through this orifice is common in health; the valve thus becoming a sort of safety valve, preventing too much blood being thrown into the pulmonary vessels. We give his summary of the causes of the sounds of the heart. He is satisfied that he has, in certain cases of thickening, clearly distinguished by the ear the valvular element of the first sound.

"The first sound is compound, and caused certainly by the tension of the auriculo-ventricular valves, and by the striking of the apex of the heart against the ribs; and probably, also, by the muscular contraction, and by the friction of the blood against the walls of the ventricles.

"The second sound of the heart is simple, and caused by the tension of the valves of the aorta and pulmonary artery during the disatole of the ventricles."

In the following lecture which treats of the signs and symptoms of diseased heart, we find some good arguments drawn from the effects of hypertrophy and pericardial effusion, in support of his view of the mechanism of the first sound. After speaking of the muffling of the sounds by the interposition of fluid, he adds:

"Great hypertrophy of the heart also tends to render the sounds

less distinct, and in two ways: first, the increased thickness of the walls of the heart obscures the valvular element of the sounds; and secondly, the increased size of the organ, by filling up the mediastinal spaces, leaves no room for it to spring forward against the ribs. It presses against the ribs, rather than strikes them. I have been led, from the consideration of these facts, to think that the first sound is chiefly dependent upon the causes to which I have given the chief place in the production of this sound, viz., valvular tension and the striking of the apex against the ribs, because in cases in which this sound is very obscure and feeble, the muscular contraction may be strong, which would increase the muscular sound, as well as that produced by the friction of the blood, if, indeed, they are true elements of the first sound. Again; when the heart is dilated, and the walls thin, the first sound is loud and clear, approaching in character the second sound, although the action of the heart is feeble. In this case it is probably chiefly valvular, for the apex hardly strikes the ribs, the friction of the blood is diminished, and the muscular substance, thin and delicate, and closely applied to the walls of the chest, would more readily transmit a valvular sound from within, while any sound it might generate by its muscular contraction would be comparatively feeble. It is thus that diseased action sometimes strikingly corroborates the phenomena of healthy action."

There have been promulgated since the time of Laennec, according to Dr. Walshe, not less than twenty-nine different theories of the mechanism of the heart's sounds. We believe the one adopted by Professor Skoda of Vienna, is not included in the number, and as it varies in some points from any that have preceded it, we shall give the chief features of it, so far as relates to the first sound, as we find them stated in the recent work of Dr. Herbert Davies, on Physical Diagnosis. This distinguished auscultator considers that the first sound is to be regarded as partly ventricular and partly arterial. That the ventricular first sound is due to the stroke of the apex of the heart against the chest-wall, the sudden tension of the auriculo-ventricular valves, and the impulse of the blood upon their tense surfaces during the closure of the orifices to which they correspond, (to these Dr. Davies would add the sound of muscular contraction;) and that the arterial first sound results from the suddenly increased tension of the coats of the aorta and pulmonary artery by the shock of the blood impelled upon them. It will be perceived that Dr. Swett's theory coincides in the most essential particulars with this of Skoda,—that he gives the same prominence to the shock of the apex and the tension of the valves—while Skoda introduces some additional elements, which will, we think, be found important and useful in forming the diagnosis of the morbid sounds.

We had marked numerous passages in this part of Dr. Swett's book for comment and quotation, but we must confine ourselves to a few. Suffice it to say, however, that we consider this as by far the best portion of the work. It has evidently had more labor expended upon it than other parts. It is not taken so directly from the ste-

nographer's notes of extempore lectures delivered ten years since; (this, the preface informs us, was the basis of the work—and to the stenographer, we fancy, we are to attribute some of the bad spelling which occurs in the first portion of the book, "*hemophthisis*," for example, instead of hæmoptysis, &c). It is richer in cases, always interesting and well told, and it covers each subject more completely than does the portion on the lungs, if we except that part which relates to tubercles.

In the treatment of acute pericarditis and endocarditis, the author prescribes the usual plan by antiphlogistics and mercury, actively employed. He makes, however, the following exceptions which evince good judgment:

"You will sometimes find cases of acute pericarditis benefited by a treatment directly opposed to the antiphlogistic. When the disease occurs in delicate or enfeebled constitutions, when it has been too actively treated at the commencement, when it has co-existed with inflammation of other organs and a state of anemia or exhaustion has followed, the progress of the cure may cease from the want of reactive power in the system. The case, examined from day to day, presents no improvement in the rational symptoms, or in the physical signs. The patient grows more pale and feeble, a tendency to œdema and night-sweats ensues. You find that your antiphlogistic remedies rather aggravate than improve the condition of the patient. It is now time to change your plan of treatment, and to administer tonics with moderation, allowing, at the same time, a more nutritious diet. The iodide of potassium, or the iodide of iron, either separately or in combination, and united with the decoction of sarsaparilla, are, I think, the best remedies. At the same time, sleep may be procured at night and irritation quieted by small doses of opium. Soup, solid animal food, and even a little wine, may be useful in such cases.

"There are cases which may be benefited by a mixed treatment. Mercury may be given in combination with tonics. In such cases, the protiodide of mercury may be used advantageously with the iodide of potassium or of iron. This treatment is especially indicated in the treatment of acute cases which have been neglected at an early period, and have never been brought under the mercurial influence. It is also indicated in the treatment of chronic pericarditis, when these remedies may be combined with diuretics, and other means calculated to promote the absorption of effused fluids. Blisters are, I think, particularly indicated in this form of the disease, especially if it is attended by pain in the precordial region. They are often used in the acute form of the disease, but they are most useful in neglected cases, or in the chronic form of the disease."

Two lectures are occupied with the subject of "Enlargement of the Heart." We like much the author's observations upon this condition. He thinks that most writers have confused rather than simplified the matter, by too systematic an arrangement and division of the subject into Hypertrophy, Dilatation, &c. While admitting the ex-

istence of simple hypertrophy and simple dilatation, he doubts whether there are any certain indications by which they can be severally determined during life, and whether if recognized it would lead to any practical results. The great object is to ascertain whether enlargement exists. He doubts, moreover, whether "concentric hypertrophy," so called, should be recognized as a morbid condition, having never met with an unequivocal case of it. Where he has met with this condition it has almost invariably been in cases of sudden death from hæmorrhage, the patient dying during the systole. Allusion is made to the experiments of Cruveilhier as almost conclusive on this point. He further alludes to the influence of the stasis of blood in the cavities of the heart, during a prolonged agony, as producing the opposite condition, viz.: apparent dilatation.

The causes of enlargement of the heart having been spoken of, and which may all be reduced to one, namely, an impediment of some sort to the circulation, the author remarks that in tuberculous disease of the lungs the heart is not larger but smaller than the average. In this case, although obstruction to the pulmonary circulation exists, quite as great as in emphysema, which often produces enlargement, yet this is more than compensated for by a diminution in the quantity of the blood.

A graphic description of that perplexing affection known as *angina pectoris* will be found in this connection. The author does not attempt to give a perfectly satisfactory explanation of its causes, but in common with other authorities ascribes to it a neuralgic character, in connection with a weakened condition of the heart.

Dr. Swett regards displacement of the apex as the most important sign of enlargement, and remarks that:

"Generally, it is easy to find the point where the apex strikes both by the touch and by the eye. You might suppose that it would be easier to ascertain this point in the enlarged than in the healthy heart, but it is not always so. It would be a great mistake to suppose that in every case of enlargement there is strong action of the heart. In many cases, perhaps in most cases of advanced enlargement, the action of the heart is feeble. The heart becomes worn out, if I may so speak, and, like a tired muscle, acts feebly; so that if you feel for the apex, you may not find its striking point. There is another reason why this may happen: the heart, as it enlarges, fills up the mediastinal spaces, so that there is no longer any room for the apex to spring forward against the ribs—the whole surface of the heart lies against the walls of the chest. Thus, in cases of enormous enlargement, even when this is chiefly hypertrophy of the muscular substance, there is rather an obscure heaving than a distinct impulse."

From the chapters on valvular disease we extract the following interesting cases:

"As a general rule, the changes in the valves and in the corresponding orifices being gradual, the physical signs connected with them are gradually developed. But this is not always the case. A

striking case has recently occurred to me, in which the aortic valves, weakened by inflammatory changes in their structure, during the convalescence from an attack of fever, suddenly gave way, so as almost to destroy entirely the action of these valves. Regurgitation was almost as great as if no valves had existed. In this case no sound was developed; the regurgitating orifice was too large for that. But there was another reason. The heart was overpowered by the congestion of the left cavities, for the quantity of blood that flowed back into the left ventricle during the diastole, must have been nearly as great as that expelled by the previous systole. Examination disclosed a very rapid and tumultuous action of the heart, a confused, rushing sound in place of the natural sounds, while the pulse retained considerable strength, and was regular in its action. The dyspnœa was very marked, and the patient soon expired. This sudden rupture of a valve, but in a less degree, is probably not a very rare occurrence, and then the signs of regurgitation might suddenly ensue. I think I have known this happen even when no evident previous disease existed, as after a sudden effort, in which a portion of a valve, or perhaps a tendon connected with a valve, had suddenly been ruptured, and a regurgitating murmur, with symptoms of disturbed circulation, ensued. I recollect very well the case of a child, about eight years of age, who was suddenly seized with symptoms of heart disease, after attempting to carry some heavy books up stairs. In this case I noticed a murmur indicating mitral regurgitation, which continued more than a year, and finally ceased."

And the following touching venous pulsation:

"If obstruction of the mitral orifice reveals itself but seldom by an endocardial sound, how much less frequently should you expect to find it in obstruction of the orifice of the tricuspid valve, since the action of the right side of the heart is naturally so much more feeble than that of the left side! The endocardial sound, indicating imperfect closure of the tricuspid valve, may possibly occur; but when it does not, you may notice another sign which indicates the same thing: this is the pulsation of the jugular veins, synchronous with the pulsation of the heart. This symptom, however, I think, often occurs towards the termination of heart disease, simply as the effect of a dilatation of the orifice beyond the ability of the valves to close; the effect of distention of this, the weakest portion of the heart. I suppose the same pulsation would be noticed in the pulmonary veins, if they could be seen or felt, in cases of regurgitation through the orifice of the mitral valve."

While the author admits that the condition of the pulse may sometimes contribute to the certainty of the diagnosis in enlargement and valvular disease, he thinks it is not to be much depended on, as no condition of the pulse is characteristic of any morbid change. We fully agree with him on this point notwithstanding that we have several times had our attention first drawn to cardiac difficulty, and even been led to suspect its exact nature from the state of the pulse, and we presume this is not unfrequent. But that it will vary in

different cases of the same affection and at different times in the same case, we think every careful observer will admit.

A selection or two from the chapters on Aneurism of the Aorta must close this review. First, as to the pathological changes in the vessel. Dr. Swett believes that the patches of lymph (the result of inflammation), which subsequently assume the form of cartilage, may undergo the process of calcification, like atheroma, and says that most pathologists agree with him and that analogy confirms it. Bizot, however, he admits, is of a different opinion, and so is Hasse. The latter is very explicit and decided upon this point, asserting unqualifiedly that the semi-cartilaginous formation *never* ossifies. The place of deposit of these two products is different, one being formed upon the free surface of the lining membrane, while the other is beneath it, in the elastic coat: their original constitution is different, and the natural presumption is that their ultimate terminations would be different. Moreover, we are unable to discover the "analogy" to which Dr. Swett alludes. If he has in view the bony change which the cartilages of the ribs and other cartilaginous structures undergo in advancing age, we think the analogy will not hold good. For, in that case it is a genuine, normal tissue which undergoes a change. It will not do to argue from that to an adventitious product of inflammation, which resembles it indeed in appearance, but is no more true cartilage than the ossiform plates of atheroma are true bone. On the other hand there is no reason why the two conditions should not succeed each other at the same points in the artery, but certain evidence to show that they do: that atheromatous deposits sometimes take place in the subserous tissue at points where the fibrinous exudation exists upon the lining membrane; and that inflammation and its results may take place in and upon the lining membrane beneath which the atheromatous deposit already exists. They are thus found simultaneously, and this circumstance has led many observers into error.

In regard to that form of aneurism first described by Mr. Skeleton, of Dublin, according to the author, but previous to him by Laennec, as the *dissecting aneurism*, Dr. Swett supposes that gentleman to have been in error when he described it as effecting a separation between the middle and external coats of the artery. His reason for thinking so is that in two cases examined by him the middle coat was "split" in two, and not separated entire from the external coat.

"In these cases a recent fissure was noticed near the commencement of the aorta, which had penetrated the internal coat, and, to a certain depth, the middle coat. Starting from this fissure, the middle coat was split, so as to form a canal filled by blood. In one of the cases this splitting of the middle coat was so considerable as to extend nearly to the diaphragm, and it embraced one-half the circumference of the artery. Indeed, in this case another fissure was noticed below, opening into the cavity of the vessel from the false passage, so that in fact the blood may have circulated through the whole length of the thoracic aorta in two parallel channels placed side by

side. Whatever may be the cause of this singular change, it was evidently of recent formation. The lining membrane presented no unusual appearances, while the middle coat, although deeply stained by blood and evidently softened, still preserved its fibrous appearance. In these cases death was sudden, from the rupture being continued into the pericardium, which was found filled with blood, and in one case it occurred after a considerable muscular effort"

We prefer to doubt the correctness of Dr. Swett's opinion in regard to this splitting of the middle coat. Our reasons are as follows: The inner surface of nearly all aneurisms is covered by a false membrane whose fibrous structure makes it resemble very closely the coats of the vessels. The elastic coat of arteries is composed of a modification of the yellow fibrous tissue, and exhibits all the characters of this tissue except that the fibres are *more minute and less easy of separation.** It would be easy then for Dr. Swett to mistake such a false membrane for a portion of the middle coat, and we believe that he has done so. But the strongest reason for supposing him to be in error springs from the structure of the tissue itself. The fibres of the elastic coat are shown by the microscope to interlace with each other in a most remarkable manner. This is unequivocally shown in all the representations of the tissue that we have seen, and it renders it almost impossible to believe that a "splitting" could occur in the manner described by Dr. Swett.

The work closes with an appendix describing the microscopic constitution of tubercle and cancer, and two plates, exhibiting the appearances under the microscope.

In concluding this examination of Dr. Swett's treatise we would repeat the opinion we have already expressed as to its general excellence. It is a pleasant companion and a safe guide; not as full in some particulars as we could have desired, but avoiding many useless details and simplifying and elucidating much that was obscure and entangled. It is a firm basis upon which the diligent student may erect a solid superstructure of knowledge. Shunning matters in controversy, it is a substantial statement of settled truths. It will materially enhance the author's reputation as a writer, a lecturer and a practical physician. S. C. F.

BIBLIOGRAPHICAL NOTICES.

ART. X.—*A Treatise on the Practice of Medicine.* By GEORGE B. WOOD, M. D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania; President of the College of Physicians of Philadelphia; One of the Physicians of the Pennsylvania Hospital, etc. etc. Third Edition, in two volumes. Philadelphia: Lippincott, Grambo & Co. 1852. 8vo. pp. 847–853.

IN calling the attention of our readers to a new edition of this treatise, it is only necessary for us to allude in a general manner to

* See the lectures of Mr. Quekett upon Histology, just issued.

the additions and revisions the work has undergone. The main features of the work remain unchanged, although nearly every section is posted up in the improvements effected during the last three years; this will be particularly observed under the headings of inflammation, fatty degeneration, carcinoma, epidemic cholera, Bright's disease, etc. etc. "Among the additions may be mentioned brief notices of several diseases, which, from their rarity, or total absence in this country, or from yet being unknown as distinct affections, were not described in former editions. Such are the relapsing fever of Dr. Jenner, the leucocythemia of Prof. Bennett, the dengue, and certain cutaneous affections, as trichosis, lupus, and pellagra." In the changes which have been wrought, this edition has been extended by nearly eighty additional pages, thus giving opportunity of recording all established improvements, and at the same time rendering it still more worthy of the approbation of the profession. We recommend it as a *good* treatise; a happy effort of a learned physician; a work pre-eminently adapted to the wants of the practitioner; a work that has and will continue to honor the profession, and its accomplished author.

ART. XI.—*The History, Diagnosis, and Treatment of the Fevers of the United States.* By ELISHA BARTLETT, M. D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of the University of the State of New-York; Member of the American Academy of Arts and Sciences, etc. etc. Third edition, revised. Philadelphia: Blanchard & Lea, 1852. 8vo., pp. 595.

WE are pleased to see a new edition of this admirable work, *the* work which forms the foundation of the distinguished author's literary reputation. The greater amount of additions made to this edition will be found in the chapters on *typhoid* and *typhus* fevers, where the papers of Dr. Wm. Jenner of London are cited as *the principal* contributions made since the date of the second edition and drawn largely upon in support of the "wide and fundamental differences" which the author believes to exist between these forms of fever. The question of the identity or non-identity of these forms of continued fever will for a long time continue to be a mooted one—till at least the differential variations of epidemics of continued fever are better understood and appreciated.

The typography and paper of this volume are all that could be desired—decidedly superior to that of the previous editions; and as we regard this treatise the best extant on our fevers, we commend it to the continued confidence and support of the profession.

ART. XII.—*The Principles of Surgery.* By JAMES MILLER, F. R S. E., F. R. C. S. E., Author of A Treatise on the Practice o Surgery; Professor of Surgery in the University of Edinburgh etc. etc. Third American from the second and enlarged Edin

burgh edition. Illustrated by two hundred and forty engravings on wood. Revised, with additions. By F. W. SARGENT, M. D., Member of the College of Physicians of Philadelphia; Author of "Minor Surgery," etc. etc. Philadelphia: Blanchard & Lea. 1852. 8vo., pp. 751.

THE deserving merits of the first edition of this work obtained for it a high position among the classics of Surgical literature. The ample corrections and large additions made to the present by author and editor, cannot fail to insure for it much praise and sustain the increased expectations of the learned in Surgery. We recommend it to both student and practitioner, feeling assured that as it now comes to us, it presents the most satisfactory exposition of the modern doctrines of the principles of Surgery to be found in any volume in any language.

ART. XIII.—*Lectures on Histology, delivered at the Royal College of Surgeons of England, in the Session of* 1850–51. *Elementary Tissues of Plants and Animals.* By JOHN QUEKETT, Assistant Conservator of the Museum of the Royal College of Surgeons, England. Illustrated with one hundred and fifty-nine woodcuts. London and New-York: H. Bailliere. 1852. 8vo., pp. 215.

THIS volume is a revised edition of the course of lectures by the author, which appeared in the Medical Times for 1851. These lectures, eighteen in all, are a most valuable addition to histological science. We are pleased to see them before the public in their present form, and bespeak for them the favorable attention of microscopical students and observers.

ART. XIV.—*Obstetrics: the Science and the Art.* By CHARLES D. MEIGS, M. D. Professor of Midwifery and the Diseases of Women and Children in Jefferson College, Philadelphia; lately one of the Physicians of the Lying-in Department of the Pennsylvania Hospital; Vice-President of the Philadelphia College of Physicians, etc. etc. Second edition, revised. With one hundred and thirty-one illustrations. Philadelphia: Blanchard & Lea. 1852. 8vo., pp. 759.

WE have here a new and somewhat improved edition of Professor Meigs' best book. The changes particularly manifested in this edition are seen in the relation of new cases, the revision of the chapter on cyanosis, and in the substitution of a new chapter on child-bed fever in the place of the chapter on puerperal fever in the previous edition. The substitution of this chapter is alone sufficient to commend this edition to the student as well as practitioner.

PART THIRD.

AMERICAN MEDICAL RETROSPECT.

Abstract of Proceedings of the American Medical Association, at its late Meeting, held at Richmond, Va., May 4, 1852.—The Association met in the Second Presbyterian Church, at 11 o'clock. The President, Dr. Moultrie, of Charleston, S. C., in the chair.

Dr. James Beale, Chairman of the Committee of Reception, welcomed the delegates to the city of Richmond.

Dr. Haxall, Chairman of Committee of Arrangements, read a list of the delegates who were present, and registered.

Dr. Hays, of Pa., offered the following resolution:

Resolved, That a committee of one from each State, to be selected by its delegation, be appointed to nominate suitable officers for the Association.

The resolution having been adopted, a recess of ten minutes was taken, to allow the delegation opportunity to appoint the Nominating Committee.

At the expiration of the recess, the President announced the Nominating Committee.

After the calling of the roll, the President delivered the Annual Address.

The Nominating Committee then reported the following gentlemen Officers of the Association for the present year:

For President—Beverlly R. Welford, M. D., of Va.

For Vice Presidents—Jonathan Knight, M. D., of Conn.; James W. Thompson, M. D., of Del.; Thos. S. Simons, M. D., of S. C.; Chas. A. Pope, M. D., of Missouri.

For Treasurer—D. Francis Condie, M. D., Pa.

The officers thus nominated were duly elected, and the committee requested to nominate Secretaries, and to decide upon the next place of meeting.

On motion, Drs. John L. Atlee, of Pa., Haxall, of Va., and Eve, of Tenn., were appointed a committee to wait upon Dr. Welford, and announce his election, and conduct him to the chair. Dr. Welford having taken the chair, returned his thanks for the honor conferred upon him.

Dr. Haxall, of Va., offered the following preamble and resolution, which were unanimously adopted:—

"The American Medical Society in Paris, being so constituted that it would be entitled to representation if it existed in this country, and as it is recognized abroad as an American institution:

Resolved, That the delegates accredited to the Association by the American Medical Society in Paris, be, and are hereby invited to take seats in this body."

Dr. Paul Lajus offered the following resolution, which was adopted:

Resolved, That Dr. Brown Sequard, of Paris, be invited to occupy a seat among the delegates at the present meeting of the Association.

Dr. Isaac Hays read the Report of the Committee on Publication, and the Report of the Treasurer. They were received, and the following resolutions appended to the report of the Committee of Publication were unanimously adopted:—

Resolved, That the assessment for the present year be three dollars.

Resolved, That the Committee of Publication be authorized to fix the price at which the Transactions for the present year will be furnished to such of the members of the Association as shall remit the amount decided upon by the committee within a specified time, to be fixed by them. And that it shall be the duty of the said committee to issue a circular, informing the members of the terms upon which the Transactions will be furnished them.

Resolved, That the Committee be further authorized to take such measures in the disposal of the copies of the Transactions remaining after all such members are supplied, as shall comply with the terms set forth in the circular of the Committee, as they may deem expedient.

Dr. Hayward presented the report from the Committee on Prize Essays, and broke the seal of the packet, containing the name of the author of the essay entitled, "*On Variations of Pitch in Percussion and Respiratory Sounds, and their application to Physical Diagnosis*," which was deemed worthy of the prize. The author proved to be Dr. Austin Flint, of Buffalo, N.Y., to whom the prize was awarded, and the report referred to the Committee of Publication.

The Report of the Committee on the Medical Botany of the U. S. for 1850–51, from Dr A. Clapp, Conn., was presented and referred to the Committee of Publication.

Dr. R. W. Haxall, of Va., read a short report of the progress of the Committee on the Epidemics of Virginia and North Carolina, and asked to be continued; which request was granted.

On motion of Dr. Gooch, the Editorial Corps were invited to take seats on the floor.

The Secretary stated that he had transmitted copies of the preamble and resolutions of 1850–51, relative to assimilative rank of the medical staff of the army and navy, to the several departments ordered by the resolutions, and that the Chief of the Bureau of Medicine and Surgery at Washington had approved the course recommended by the Association, in a letter, which was read. Dr. Pinkney, of the Navy, asked leave to read a memorial which he had

prepared to present to Congress on this subject, and which he sustained in a lengthened and forcible speech; after which Dr. Cox, of Md., offered resolutions expressive of the approval of the Association in the matter, &c., &c.,—which resolutions were referred to a special committee.

Dr. Simons, of S. C., offered the following resolutions:

Resolved, That the American Medical Association do memorialize Congress to require all vessels bringing steerage passengers over, to have a surgeon on board.

Resolved, That a committee of this Association be appointed to draw up a memorial to Congress, making such suggestions as they may deem fit as regards the importance of this measure.

The Report of the Committee upon the Constitution—being the special order—Dr. Hays, chairman of the committee, made a report. Dr. T. H. Yardley, a member of the committee, presented a counter-report. Much discussion ensued, and many resolutions and amendments were proposed, and withdrawn in favor of the following resolution, offered by Dr. Thomas, of Md., and amended by Dr. Stewart, of N. Y.

Resolved, That the two reports on proposed alterations of the Constitution, be referred to a committee of three, to be appointed by the chair, with instructions to report to-morrow morning in definite and proper form, such amendments as will embrace the views set forth in the reports, and such other views as may appear to them advisable.

The resolution was adopted.

The Secretary read the following communication from the New-York Academy of Medicine, which, on motion, was referred to the Publishing Committee, and ordered to be printed.

NEW-YORK ACADEMY OF MEDICINE,
NEW-YORK, April 22, 1852.

SIR:—I have the honor to transmit to you a copy of the preamble and resolutions adopted at a regular meeting of the New-York Academy of Medicine, held April 21, 1852:

Whereas the Clinics, now held at the Medical Colleges, as at present conducted, are, or may be made tributary to the private interests of the professors, at the expense of other and younger members of the profession: depriving them, by an odious monopoly, of practice and operations, and often of *fees* to which they are justly entitled:

Therefore Resolved, As the sense of this Academy, that to prescribe or practise upon the legitimate patients of any other physician, knowing them to be such, although done gratuitously at a Clinic, is equally unwarrantable and unprofessional, with similar interference with the patients of another in private practice; and in either case, is a violation of the code of medical ethics adopted by this body.

Resolved, That the possible perversion of these Clinics to the private emolument of those conducting them, by transferring patients to their private offices, and then exacting fees from those found able to pay, divests the Clinics of all pretext for professing to be public charities, and should be scrupulously guarded against in all our colleges by stringent rules.

Resolved, That a copy of these resolutions be sent to the authorities of the several medical colleges in this city.

Dr. Eve, from the Committee on Nominations, recommended the following additional Officers for the ensuing year:—

For Secretaries—Drs. P. Claiborne Gooch, of Va., and Edw. L. Beadle, of N. Y.

Committee of Publication.—Drs. D. F. Condie, of Pa.; Isaac Hays, of Pa.; P. C. Gooch, of Va.; E. L. Beadle, of N. Y.; Isaac Parrish, of Pa.; G. Emerson, of Pa.; G. W. Norris, of Pa.

Committee of Arrangements.—Drs. F. Campbell Stewart, of N. Y.; John Watson, of N. Y.; Wm. Rockwell, of N. Y.; James R. Wood, of N. Y.; Robt. Watts, jr., of N. Y.; Alfred Post, of N. Y.; John G. Adams, of N. Y.; H. D. Bulkley, of N. Y.

On motion, the Report was received, and the gentlemen named were unanimously elected Officers of the Association.

The Report of the Committee on "The Blending and Conversion of the Types of Fever," was next read by Dr. C. B. Williman, S. C. (in place of Dr. Dickson, not present), and referred to the Committee of Publication.

Dr. Hayward, of Mass., presented and read a Report upon the Radical Cure of Hernia, which was also referred to the Publishing Committee.

Dr. Greene, of N. Y., offered the following resolutions:—

Resolved, That at all future meetings of this Association, the reports of committees and all contributions on scientific subjects, occupying more than ten pages of quarto post manuscript, be accompanied each by an abstract or synopsis embracing the principal points of such report or paper, which abstract or synopsis may be read before the Association.

Resolved, That the above resolution be transmitted to the Chairman of each Committee.

The thanks of the Association were presented to the physicians and citizens of Virginia, to the Trustees of the Second Presbyterian Church, to the Committee of Arrangements, and to the Managers of the Danville Railroad Company, for their kindness and attention to its members.

The following committee was appointed to report what action this Association should take in order to procure, for distribution among the medical profession of the United States, a large edition of the Medical Statistics of the Country, as furnished by the late census: viz., Drs. Simons, of S. C.; Boyle, of D. C.; Sumner, of Conn.

The following committee was appointed to report on the Relation between Climate and Pulmonary Consumption: viz., Drs. D. F. Condie, R. E. Rodgers, J. M. Smith, Moultrie, and McGuire.

On motion of Dr. Rockwell, it was *Resolved*, That the committee to memorialize Congress on the subject of compelling passenger vessels to carry surgeons, be directed also to call their attention to the importance of giving to each steerage passenger a certain amount of space between decks.

The Nominating Committee reported the following Special Committees:—

D. F. Condie, Philadelphia, Causes of Tubercular Disease.

James Jones, New-Orleans, The Mutual Relations of Yellow and Bilious Remittent Fevers.

R. S. Homes, St. Louis, Missouri, Epidemic Erysipelas.

Charles D. Meigs, Philadelphia, Acute and Chronic Diseases of the Neck of the Uterus.

J. P. Jervey, Charleston, South Carolina, Dengue.

Daniel Drake, Cincinnati, Milk Sickness, so called.

Dr. Lopez, Mobile, Prevalence of Idiopathic Tetanus.

George B. Wood, Philadelphia, Diseases of Parasitic Origin.

R. D. Arnold, Savannah, the Physiological Peculiarities and Diseases of Negroes.

Joseph Carson, Philadelphia, Alkaloids which may be substituted for Quinia.

S. D. Gross, Louisville, Ky., Results of Surgical Operations for the Relief of Malignant Diseases.

James R. Wood, New-York, Statistics of the Operation for the Removal of Stone in the Bladder.

Alexander H. Stevens, New-York, Sanatory Principles applicable to the Construction of Dwellings.

G. Emerson, Philadelphia, Agency of the Refrigeration produced through Upward Radiation of Heat, as an Exciting Cause of Disease.

Henry J. Bigelow, Boston, The Best Means of making Pressure in Reducible Hernia.

A. T. B. Merritt, Richmond, Cholera and its Relations to Congestive Fever; their Analogy or Identity.

Usher Parsons, Providence, R. I., Displacement of the Uterus.

H. F. Campbell, Augusta, Ga., Typhoid Fever.

Worthington Hooker, Connecticut, Epidemics of New-England and New-York.

John L. Atlee, Lancaster, Pa., Epidemics of New-Jersey, Pennsylvania, Delaware, and Maryland.

R. W. Haxall, Richmond, Va., Epidemics of Virginia and North Carolina.

William M. Bolling, Montgomery, Ala., Epidemics of South Carolina, Georgia, Florida, and Alabama.

Edward H. Barton, New-Orleans, Epidemics of Mississippi, Louisiana, Texas, and Arkansas.

Dr. Sutton, Georgetown, Ky., Epidemics of Tennessee and Kentucky.

Thomas Reyburn, St. Louis, Mo., Epidemics of Missouri, Illinois, Iowa, and Wisconsin.

George Mendenhall, Cincinnati, Ohio, Epidemics of Ohio, Indiana, and Michigan.

Committee on Volunteer Communications.

Joseph M. Smith,
John A. Swett,
Willard Parker,
Gurdon Buck,
Alfred C. Post,
} all of New-York.

The titles of the Reports on Epidemics and other special reports were read, and they referred to the Committee on Publication.

The subject of altering several important provisions of the Constitution having been presented in a majority and minority report, both submitted by different portions of a committee, to whom the subject was referred last year, claimed a considerable share of attention in the Association, and much interesting discussion ensued, in which some of the most distinguished men of our profession participated; and the committee who were charged with condensing the subjects of both reports into one, so far as they could be made compatible with each other, presented a series of well-digested propositions, which, after free discussion and some alterations, were laid on the table till next year, then to be taken up and finally acted upon. These propositions embrace the absorbing question of delegation, and present a conservative policy, which may probably be adopted, as it is evident the Association is not yet fully prepared to exclude the schools from a representation at its meetings.

The Committee suggest that delegates shall be appointed for one year, that they shall hold their appointment from County and State Medical Societies, from chartered Medical Colleges, Hospitals, and permanent voluntary medical associations in good standing with the profession, and from the medical staffs of the army and navy. The county, district, and voluntary chartered medical societies, shall have the privilege of sending one delegate for every ten of its resident members, and one more for every additional fraction of more than one-half that number; while every State Society may send four delegates; and, in those States in which County and District Societies are not generally organized, they shall be entitled to send one for every ten regular members, and one more for every additional fraction of more than half of this number. No Medical Society shall have the privilege of representation which does not require of its members an observance of the code of ethics adopted by the Association. Every chartered Medical College, acknowledging fealty to the code of ethics, having six professors, and giving a course of lectures of not less than sixteen weeks annually, requiring also of students three years' study; and hospitals, and lunatic asylums, having accommodations for one hundred patients, shall be entitled each to one delegate. The University of Virginia, in consequence of its peculiar mode of instruction and examination, was mentioned as worthy of representation, notwithstanding it does not comply, in some respects, with the terms of the proposition; but the exception in its favor is only to be continued so long as the present system of teaching shall remain in force.—*N. J. Med. Rep.*

Croup.—Compound Tincture of Chloroform as a Remedy.—(*Boston Soc. for Med. Improvement.*)—Dr. STRONG was consulted, late on Sunday evening, in reference to a case of alleged croup. The parents had been familiar with the disease. After inquiring respecting the symptoms, it was thought best to send directions for the treatment, with the understanding that it should be tried, and if without

any relief, Dr. S. was to be summoned in the night—otherwise, to visit next morning. The child is about two years old. The prescription for the night was hydrargyri subsulphatis ℈ss.; pulvis ipecacuanhæ ℈j.; pulvis ipecac. et opii, gr. vj.; misce et div. in chart. no. vj.; one powder to be given every fifteen minutes until free vomiting was induced; the feet to be first placed in warm water; and in case of no relief, or if there should be a temporary relief, and then a return of symptoms, the same to be repeated after an interval of two hours. Dr. S. saw the child the next forenoon, and learned that the emetic had been taken, with some temporary relief; the child, at his visit, had quick, laborious breathing, with a croupy cough, aggravated from time to time, and the peculiar, dry, sonorous character of the respiration incident to the worst forms of croup; the countenance, at times, livid. The throat, carefully examined by sunlight, showed white lymph upon both tonsils and over the fauces. Having treated other cases like this without avail, Dr. S. was strongly impressed with the idea that the child would die, and so expressed himself. A cathartic was prescribed, the bowels being confined; and compound tincture of chloroform was freely applied, by cloths saturated with it, to the neck, and the fauces and tonsils were wetted with it by means of a linen "swab." The cloths were re-moistened and applied as soon as they became dry; and this was persevered in through the day, the applications and swabbing being attended to perhaps as often as once an hour. At a visit made that evening, the same treatment was directed for the ensuing night, with the addition of a grain of Dover's powder, which was to be repeated every two to four hours, as the symptoms were, or were not urgent.

Next morning the child was better; there had been no attacks of severe dyspnœa; and there were intervals when the breathing was nearly natural. The same treatment was still continued; the application to the throat to be made at longer intervals: in the evening of this day all the croupy symptoms were gone, and the child recovered rapidly. Auscultation detected evidences of bronchitis.

The compound tincture of chloroform has been used by Dr. S. in incipient inflammations—as in bubo, in inflamed glands of the neck, paronychia, and deep-seated inflammation of the hand; also, in inflamed and ulcerated gums; and, so far, with most marked advantage.—*Amer. Jour. Med. Sci.*

Ligation of the Primitive Iliac Artery.—In the *New-Orleans Medical and Surgical Journal* for May, is reported a case of an Irishman, aged twenty-five years, who was admitted into the Charity Hospital for aneurism of the left femoral and external iliac arteries. On the 27th of March, Dr. A. J. Wedderburn ligated the primitive iliac. During the operation "severe hæmorrhage took place;" and it was found that the aneurism extended to within one inch and a half of the bifurcation of the primitive iliac artery. No chloroform was administered, and the patient complained much during the

operation. On the 29th, evidence of gangrene below the knee existed. On afternoon, the 31st, the patient died—gangrene having extended as far as the hip. Post-mortem examination revealed thickening and degeneration of the tissues about the seat of the ligature, together with enlargement of the lymphatics. Dr. Wedderburn is disposed to question the success of this operation in any case; and he doubts if a cure has ever followed this questionable operation.

Removal of a Pessary after forty-one years' residence in the Pelvis.—In the *Ohio Medical and Surgical Journal* for May, Dr. F. T. Hurxthal reports the case of a German woman, aged 73 years, who, in 1811, after a confinement, had prolapsus uteri; and upon consulting a midwife (in Germany), she introduced a ring into the vagina, which she said was made of wood covered with beeswax. It had never been removed, nor had she ever felt the least inconvenience from it, until, on the second day of an attack of pneumonia, whilst coughing violently, she felt some pain in the pelvic region, which increasing, was followed by an exceedingly fetid vaginal discharge. The pessary was removed with difficulty, by division of it by scissors. It was 3 3-8 inches in its long diameter, and 2 7-8 in its transverse diameter. On removal, it presented the appearance of a roughened stone, in some parts over an inch in thickness. The recovery was speedy and complete.

New-York Journal of Pharmacy.—This is the title of a monthly journal devoted to one of the auxiliary branches of Medical Science, recently started in this city. It is "published by authority of the College of Pharmacy of the City of New-York," and edited by Dr. B. W. McCready, a physician already favorably known in this department of Medicine, assisted by a Publishing Committee, consisting of several of our most distinguished druggists and apothecaries. We welcome it to our exchange list, and shall rejoice to see it meet with an extensive encouragement, such as its merits deserve.

OBITUARY.

Death of John S. Wiley, M. D., U. S. N., on the 20th of June, at his residence in Brooklyn, in the 57th year of his age.

Death of Dr. G. L. Spencer, at Triangle, Broome County, on the 18th of June, aged 58. Dr. S. had been in successful practice in Triangle for thirty-five years. He was esteemed by an extensive acquaintance as a highly honorable man, and an attentive and successful physician. He literally died with his harness on, and fell a sacrifice to his zeal in search of pathological truth. While performing an autopsic examination of one of his patients, he received a slight wound with the point of a needle, from the effects of which he died on the eighth day, with the ordinary symptoms of "dissection wounds."

TO READERS AND CORRESPONDENTS.

The report of a case of "Anomalous Foreign Body in the knee-joint," by J. W. S., we decline publishing. It has already appeared in two of our exchange journals since its receipt, and the issue of our July number. Such a course savors too much of a spirit of advertising, to accord with our notions of medical ethics.

The following works have been received:

Clinical Reports on Continued Fevers, based on Analyses of One Hundred and Sixty-four Cases; with remarks on the management of continued fever; the identity of typhus and typhoid fever; relapsing fever, diagnosis, &c. To which is added a memoir on the transportation and diffusion, by contagion, of typhoid fever, as exemplified in the occurrence of the disease at North Boston, Erie County, N. Y. By AUSTIN FLINT, M. D., Professor of the Principles and Practice and of Clinical Medicine in the University of Buffalo. Geo. H. Derby & Co., 1852: 8vo. pp. 390. (From the Publishers)

Operative Surgery Illustrated; containing more than Nineteen Hundred Engravings; including two hundred original and fifty colored drawings; with explanatory text, by R. U. PIPER, M. D. Also a chapter upon the Use of Ether in Surgery. By HENRY J. BIGELOW, M. D., Professor, &c. Boston: Ticknor, Reed & Fields, 1852: 12mo. pp. 384. (From the Publishers.)

Records of Maculated Typhus, or Ship Fever, with Suggestions of Treatment; being the result of a series of observations made during the prevalence of this disease at South Boston and Deer Island Hospitals, in 1847–48. With Plates. By J. B. UPHAM, M. D. New-York, 1852: 8vo. pp. 60. (From the Author.)

Transactions of the Medical Association of the State of Missouri, at its Second Annual Meeting. St. Louis, April 19th, 20th, and 21st, 1852. Vol ii. St. Louis, 1852: 8vo. pp. 116. (From the Association.)

Transactions of the Twenty-ninth Annual Meeting of the Medical Society of Virginia. Together with the President's Annual Address and the Constitution of the Society. Richmond, 1852: 8vo. pp. 62. (From the Society.)

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia, from May 4th to July 6th, 1852, inclusive. Philadelphia: Lippincott, Grambo & Co., 1852: 8vo. pp. 32. (From the Publishers.)

The Duties of Medical Men to Themselves and to their Profession. An address before the New Hampshire Medical Society. By the President, Professor E. R. Peaslee, A. M., M. D. Published by order of the Society. Concord, 1852: 8vo. pp. 16. (From the Author.)

Practical Chemistry, a Branch of Medical Education; considered in a brief letter to his class. By Alfred L. Kennedy, M. D., Lecturer in the Philadelphia School of Chemistry. Philadelphia, 1852: 8vo. pp. 11. (From the Author.)

An Address read before the Tennessee Medical Society, at its Twenty-third Session. By John M. Watson, M. D., Professor of Obstetrics in the Medical Department of the University of Nashville. Nashville, 1852: 8vo. pp. 14. (From the Author.)

The following Journals have been received in exchange:

The American Journal of the Medical Sciences; edited by Isaac Hays, M. D.; for July. (Quarterly. Philadelphia.)

The American Journal of Insanity; edited by the officers of the N. Y. State Lunatic Asylum; for July. (Quarterly. Utica.)

The American Journal of Pharmacy; edited by Joseph Parrish, M. D., and Wm. Procter, M. D.; for July. (Quarterly. Philadelphia.)

The New Jersey Medical Reporter and Transactions of the New Jersey Medical Society; edited by Joseph Parrish, M. D.; for July and August. (Monthly. Burlington.)

The Medical Examiner and Record of Medical Science; edited by F. G. Smith, M. D., and John B. Biddle, M. D.; for July and August. (Monthly. Philadelphia.)

The Charleston Medical Journal and Review; edited by D. J. Cain, M. D., and F. P. Porcher, M. D.; for July. (Bi-monthly. Charleston.)

The New-Orleans Medical and Surgical Journal, devoted to Medicine and the Collateral Sciences; edited by A. Hester, M. D.; for July. (Bi-monthly. New-Orleans.)

Southern Medical and Surgical Journal; edited by L. A. Dugas, M. D.; for July and August. (Monthly. Augusta.)

Buffalo Medical Journal and Monthly Review of Medical and Surgical Science; edited by Austin Flint, M. D.; for July and August. (Monthly. Buffalo.)

The North-Western Medical and Surgical Journal; edited by W. B. Herrick, M. D., and H. A. Johnson, M. D.; for July and August. (Monthly. Chicago and Indianapolis.)

Transylvania Medical Journal; edited by L. J. Frazee, M. D.; for July and August. (Semi-monthly. Lexington.)

The Western Lancet and Hospital Reporter; edited by L. Lawson, M. D., and George Mendenhall, M. D.; for July and August. (Monthly. Cincinnati.)

The New-York Medical Times; edited by J. G. ADAMS, M. D.; for July and August. (Monthly. New-York.)

The New-York Medical Gazette; edited by D. M. REESE, M. D.; for July and August. (Semi-monthly. New-York.)

The Boston Medical and Surgical Journal; edited by J. V. C. SMITH, M. D., July and August numbers received. (Weekly. Boston.)

The Western Journal of Medicine and Surgery; edited by L. P. YANDELL, M. D., and T. S. BELL, M. D.; for July and August. (Monthly. Louisville.)

The Ohio Medical and Surgical Journal; edited by RICHARD L. HOWARD, M. D.; for July. (Bi-monthly. Columbus.)

The Stethescope and Virginia Medical Gazette; edited by P. CLAIBORNE GOOCH, M. D.; for July and August. (Monthly. Richmond, Va.)

Nashville Journal of Medicine and Surgery; edited by W. K. BOWLING, M. D., and PAUL F. EVE, M. D.; for July and August. (Bi-Monthly. Nashville, Tenn.)

The New-Orleans Monthly Medical Register; edited by A. FORSTER AXSON, M. D.; for July and August. (Monthly, N. O.)

Nelson's Northern Lancet and American Journal of Medical Jurisprudence; edited by HORACE NELSON, M. D.; for July and August. (Monthly. Plattsburgh, N. Y.)

The New-Hampshire Journal of Medicine; edited by EDWARD H. PARKER, A. M., M. D.; for July and August. (Monthly. Concord, N. H.)

New-York Journal of Pharmacy; edited by BENJAMIN W. MCCREADY, M. D.; for June and July. (Monthly. New-York.)

The Western Medico-Chirurgical Journal; edited by J. F. SANFORD, M. D.; for July and August. (Monthly. Keokuk, Iowa.)

New-Yorker Medicinische Monatsschrift. Herausgegeben und Redigirt von Dr. J. HERZKA, Dr. E. KRACKOWIZER und W. ROTH in New-York; for June and July. (Monthly. New-York.)

The East Tennessee Record of Medicine and Surgery; edited by FRANK A. RAMSEY, M. D.; for July. (Quarterly. Knoxville, Tenn.)

The Journal of Psychological Medicine and Mental Pathology; edited by FORBES WINSLOW, M. D.; for July. (Quarterly. London.)

Dublin Quarterly Journal of Medical Science; edited by ———; for May. (Quarterly. Dublin, Ireland.)

Dublin Medical Press; edited by ———; for June and July. (Weekly. Dublin.)

Canada Medical Journal; edited by R. L. MCDONALD, M. D., and A. H. DAVID, M. D.; for July and August. (Monthly. Montreal.

The Upper Canada Journal of Medical, Surgical, and Physical Science; edited by ———; for July and August. (Monthly. Toronto.)

London Journal of Medicine; a Monthly Record of the Medical Sciences; edited by ———; for July and August. (Monthly. London.)

Monthly Journal of Medical Science; edited by Wm. Robertson, M. D.; for July and August. (Monthly. Edinburgh.)

The British and Foreign Medico-Chirurgical Review for July. (Quarterly. New-York Edition.)

The Retrospect of Medicine; edited by W. Braithwaite; for June. (Half-yearly. London.)

The Half-yearly Abstract of the Medical Sciences; edited by W. H. Ranking, M. D.; for June. (Half-yearly. London and Philadelphia editions.)

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CONTENTS.—NO. II.

(NEW SERIES.)

PART I.—ORIGINAL COMMUNICATIONS.

ART I.—Elphantiasis Arabum of the right inferior extremity, successfully treated by Ligature of the Femoral Artery. By J. M. CARNOCHAN, M. D., Professor of the Principles and Operations of Surgery in the New-York Medical College, Surgeon to the State Emigrants' Hospital, Ophthalmic Surgeon to the same Institution, &c., &c. [With a plate], 161

ART. II.—On Epidemic Typhus or Typhoid Fever as it appeared at and in the vicinity of Borodino, New-York, in the years 1849, '50, and '51. BY DR. JONATHAN KNEELAND, - - - - - - - - - - - 169

ART. III.—Statistics of the Operation of Amputation at the Hip-Joint. BY STEPHEN SMITH, M. D., - - - - 184

ART. IV.—Case of Carcinoma of the Eyelid—Blepharoplastic Operation after Dieffenbach's Method. By C. THEODOR MEIER, M. D., of New-York, - - - - 205

ART. V.—Case of Dissection Wound, followed by great Constitutional Disturbance, and Death on the eighth day. By W. D. PURPLE, M. D., of Greene, New-York, - - - 209

ART. VI.—Upon Acute Gastritis, with Cases. By JOHN A. LIDELL, M. D., of New-York, - - - - - - - - - 211

ART. VII.—Memoir on Nicotine, by M. ORFILA. Translated from the French, by CHARLES A. LEE, M. D., with notes, - 219

PART II.—CRITICAL ANALYSIS.

ART. VIII.—Report on the Mortality of Cholera in England, 1848–49. London, 1852: Printed by W. Clowes and Sons, for Her Majesty's Stationery Office. Royal 8vo., pp. 474, - - - - - - - - - - - 244

ART. IX.—Lectures on the Principles and Practice of Surgery. By BRANSBY B. COOPER, F. R. S., Senior Surgeon to Guy's Hospital, etc., etc. Philadelphia: Blanchard and Lea. 8vo. pp. 771 - - - - - - - - -

The Principles and Practice of Surgery. Illustrated by three hundred and sixteen engravings, on wood. By WILLIAM PIRRIE, F. R. S. E., Regius Professor of Surgery in the Marischall College and University of Aberdeen, etc., etc. Edited, with additions, by JOHN NEILL, M. D., Surgeon to the Penn. Hospital, etc., etc. Philadelphia: Blanchard and Lea. 1852. 8vo. pp. 784, - - - - - 250

ART. X.—On the Surgical Treatment of Polypi of the Larynx and Œdema of the Glottis. By HORACE GREEN, A. M., M. D., President of the Faculty, and Professor of the Theory and Practice of Medicine, in the New-York Medical College, Member of the American Medical Association, etc., etc. New-York: G. P. Putnam. 1852. 8vo. pp. 124, 253

PART III.—FOREIGN AND MEDICAL RETROSPECT.

PATHOLOGY AND PRACTICAL MEDICINE.

Differential Diagnosis of Aneurisms of the Arteria Innominata, and Arch of the Aorta, - - - - - - - - 254

On the Use of Manganese as an adjuvant to Iron, - - - 255
Preparations of Manganese and Iron, - - - - - 257
On Eczema Impetiginodes in Children, - - - - - 258

SURGERY.

Cases of Recovery after Fracture of the Base of the Skull, - 259
Iodine Injections in Ascite, - - - - - - - - - 260

MIDWIFERY AND DISEASES OF FEMALES.

On Abdominal Tumors during Pregnancy, - - - - 260
On a new mode of operating for Ovarian Dropsy, - - - 261
On the Diseases of the Follicles of the Vulva, - - - 263
Conclusions derived from an Analysis of one hundred cases of Cancerous Disease of the Uterus, - - - - - 266
On Sudden Death after Delivery, - - - - - - - 267

THERAPEUTICS.

On the Therapeutic Properties of Arnica Montana, - - 268

OBITUARY.

Death of John Dalrymple, Esq., - - - - - - 272
Death of Prof. William Thompson, M. D., - - - - 272
Death of John P. Vincent, Esq., F. R. C. S., - - - - 272
Death of Prof. Recamier, - - - - - - - - 272

PART IV.—COMMUNICATIONS AND AMERICAN MEDICAL RETROSPECT.

COMMUNICATION.

Case of a Child injured by Lightning. Remarks on "Coup de Soliel," - - - - - - - - - - - - - 273

PATHOLGY AND PRACTICAL MEDICINE.

Two Cases of Sudden Death during Anæsthesia, - - - 275
Dr. Haynes' Case, - - - - - - - - - - 277

On Painful Tubercle, with a Report of two Cases, with dissection, which tend to show that the affection is not Neuroma or enlargement of the Nervous Tissue, - - - - - 278
Remarkable Case of Precocity—Menstruation established at four years of age, - - - - - - - - - - 280
On the Diseases and Climate of California, - - - - 280
On the Pathology of Saccharine Diabetes, - - - - 287

SURGERY AND SURGICAL PATHOLGY.

On the Effects of Anæsthetic Agents in Operations for Gunshot Wounds, - - - - - - - - - - - 288
Strangulation from Enlarged Tonsils—Laryngotomy, - - 290
On the Radical Cure of Reducible Hernia, by Injection, - 290
Report of Twenty-five Cases of Urinary Calculus, in Twenty-three of which the bi-lateral operation was performed, - 292

MISCELLANEA.

The Mineral Acids in Cholera, - - - - - - - - 293
Efficacy of full doses of Quinine in Comatose pernicious Intermittent fevers, - - - - - - - - - - - 294
Proceedings of the New-York State Medical Society, - - 294
Editorial and Professional Changes, - - - - - 296
Philadelphia Medical and Surgical Journal, - - - - 298
Brooklyn City Hospital, - - - - - - - - - 298
Obituary, - - - - - - - - - - - - 298

DANIELS DEL AD NATUM

Dr CARNOCHAN'S CASE OF ELEPHANTIASIS ARA

TREATED BY LIGATURE OF THE FEMORAL ARTERY.

ARNOCHAN'S CASE OF ELEPHANTIASIS ARABUM.

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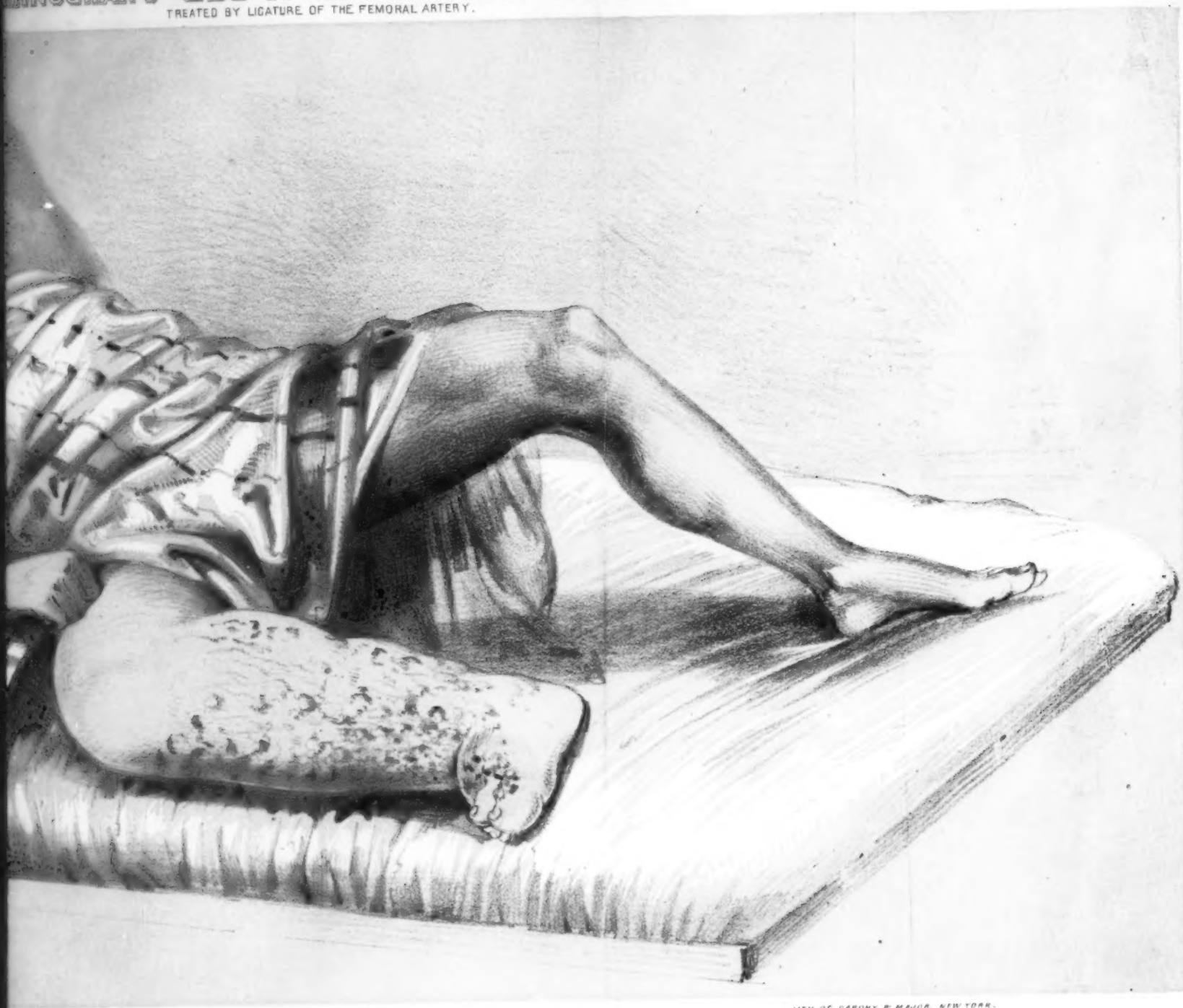

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